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ABSTRACT

This cross-cultural research study, on 82 randomly sampled male urban Spanish speaking immigrants in the District of Columbia, analyzes the relationship of the immigrants' native educational attainment to occupation and to income, to assess their manpower utilization, and to make recommendations for manpower training programs. Data on economic and social characteristics found the immigrants to be more similar to the black population rather than to the Spanish speaking and white populations in the District of Columbia. A positive relation is said to exist between native education and economic success, as measured by occupation and earnings, with the first job in the native country mediating between education and economic success. Immigrants are found to be underutilized in their U.S. occupations as compared with those held in their native countries, and those immigrants having completed a secondary education were found to be under represented in white collar positions when compared with nonimmigrants. The development of policies leading to facilitation of the tendency of immigrants to shift from the service occupations to blue collar occupations which conform to their previous experience is recommended. Chapters include background and related research, sampling procedures, characteristics of the samples, education and economic success, manpower utilization, and conclusions and recommendations. Instruments utilized are included in the appendixes. (Author/AM)

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Paul M. Zisman
School of Education
The Catholic University of America
Washington, D. C. 20017

EDUCATION AND ECONOMIC SUCCESS OF URBAN SPANISH-SPEAKING IMMIGRANTS

November, 1973

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE

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ABSTRACT

EDUCATION AND ECONOMIC SUCCESS OF URBAN SPANISH-SPEAKING IMMIGRANTS

PAUL M. ZISMAN

The purpose of this research was to analyze the relationship between educational attainment and the economic success of adult male Spanish-speaking immigrants in the District of Columbia. Census tracts were stratified and randomly sampled. Eighty-two immigrants were interviewed.

By comparing means and frequency distributions on economic and social characteristics, the immigrants were found to be more similar to the black population than to the Spanish language and white population in the District of Columbia. Their educational attainment in grades completed shows significant product-moment correlation coefficients with their occupational status (Duncan's scale) and weekly earnings. When first job in the native country is partialled out correlations cease to be significant. Thus first job is a mediator between education and economic success.

Spanish-speaking immigrants are underutilized in their U.S. occupations compared to their previous occupations in their native countries. Immigrants who have completed their secondary education are less represented in white collar occupations in comparison with non-immigrants. A manpower development policy should facilitate the tendency of immigrants to shift from the service occupations to the blue collar occupations which conform to their previous experience.

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CHAPTER I

INTRODUCTION

In the past decade or so, the attention that education has received as an independent or determinant variable has been steadily increasing. This attention is in addition to the more customary emphasis in educational research on education as a dependent or determined variable, as in studies which seek to determine what affects educational achievement. The broadening of focus is probably the result of two concurrent developments: the strength of the civil rights movement and increased interest of social scientists in contemporary social problems.

Minority groups have exposed the subtle use of the educational system as a potential means of suppression. The inferior education of minority group members excused employers from hiring them. In addition, the educational system is the most accessible instrument for social reform. The function of education in society, therefore, has increasingly become the focus of systematic study, especially the relationship of education to occupation and to income.

The conception of education as a determinant, however, is not entirely new, although the context is different. Education has been traditionally valued as necessary for a democratic society and, hence, for the general well-being of the society. In short, the likelihood of education as a cause or an independent factor having effects on a worthy outcome has been recognized but has not been the subject of much systematic study until fairly recently.

Studies treating education as an independent or determinant variable are usually concerned with social mobility or with the economic value of education. There is lacking in these studies the extension of the argument to individuals who have been educated in one cultural context and are working in another. This would be the case of immigrants who have completed their formal education in their native countries. Cross-cultural studies of this type would shed light on the effects of the cultural dimension in the relationship between education and economic success. Such research would further define the nature of education.

Cross-cultural studies would also produce findings potentially important for the understanding of the role of education in the process of economic absorption of immigrants. The ability of the immigrant to find and hold a job in the host country is probably the most essential prerequisite for his eventual full integration into the society of the host country. The importance of education as an indicator of this ability or capacity has often been postulated but it has not been a major objective of any study to come to the investigator's attention (although it has been confirmed in studies concerned with the process of economic absorption in general).

The study of education and occupation of immigrants, in addition, would allow for comparisons of the immigrant population and the host country population. Such comparisons would accomplish three things simultaneously: (1) determine the status of the immigrant's economic absorption, (2) determine whether or not immigrants are being underutilized in the labor force, and (3) further define the cross-cultural value of education.

In the course of carrying out the cross-cultural study, the data on the immigrants, once having been collected, will provide a contribution to the knowledge of immigration in the United States. Apparently, little is known about the modern immigrants after they arrive in the United States. The Immigration and Naturalization Service publishes data, but except for the annual Alien Address Report which requests little information, this data pertains only to immigrants at the time of their arrival. The Bureau of the Census publishes census data on the foreign born and a very limited amount on aliens, but these populations, although related, are not equivalent to the immigrant population.

The study which is presented in the following pages is an attempt to contribute to the body of knowledge on education as a determinant. In addition, it attempts to be a cross-cultural study. The aims of the study are to determine the relationship of the immigrant's native education with occupation and with income, to assess the manpower utilization of immigrants, and to make recommendations for manpower training programs.

The immigrants selected for the research are the Spanish-speaking immigrants in the District of Columbia. These immigrants are from Central and South America, Spanish West Indies, and Mexico. The spread of Mexican immigrants northward, away from their traditional southwestern destination, represents a new phenomenon. The presence of Central and South American immigrants (Mexico is considered to be a part of North America, geographically) in the United States is a new state of affairs in itself. In the 1910's, the decade of the heaviest influx of all immigrants, Central and South American and Spanish West Indian immigrants comprised only one third of one per cent of all immigrants. In the decade just ending, these immigrants (not including Cuban refugees) comprised 12 per cent of the inflow. Including the Mexican newcomers, Spanish-speaking immigrants from the Western Hemisphere comprise 25 per cent of the total inflow in this decade.[1]

Thus, one quarter of all modern immigrants are from Spanish-speaking countries of the Western Hemisphere. In some urban areas, the District of Columbia, for instance, this inflow represents quite a change in the ethnic composition and places unfamiliar demands on the city's institutions and services. If the United States continues to maintain its economic dominance in the hemisphere (assuming that this is what attracts most immigrants), it can be assumed that Latin American immigration will continue. Hence, this is not a passing event but one which will be present for some time to come and therefore merits study.

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[1] These calculations are from Tables 13 and 14 of the Immigration and Naturalization Service, Annual Report, 1971 (Washington, D. C.: Government Printing Office). The figures for the decade just ending refer to the fiscal years from 1962-1971. Brazil is excluded from South America and only the Dominican Republic is included of the West Indian countries.

Scope and Limitations

This study is concerned with voluntary immigrants who are considered by the Immigration and Naturalization Service to be "permanent residents," i.e., immigrants who after at least five years of continuous residence in the United States will be eligible to apply for naturalization. These immigrants come to the United States voluntarily, not with refugee status, and have the status of permanent immigrant, not the status of temporary alien worker or visitor. For Spanish-speaking immigrants, this means that Cubans as refugees and Puerto Ricans as citizens are excluded, as are temporary workers, foreign workers with international visas (working for international organizations), tourists, students and illegal entrees. It is further specified that the members of the survey population reside in the District of Columbia and be male from the Spanish-speaking countries of the Western Hemisphere.

This study has two major methodological limitations. Measuring educational attainment by grades completed neglects the quality of education and may not include on-the-job training or other types of training not included in non-formal education. Also, all the information is based on the informants' responses which are naturally subject to unintentional as well as intentional omissions and distortions.

Definition of Terms

Definitions are stated below for the most recurring terms used in the study. These terms and others referring to the characteristics of immigrants and to the survey population definitions can be better understood in terms of the methodology. The survey population is delimited in Chapter III and its characteristics are described in Chapter IV.

1. Spanish-speaking immigrants: voluntary permanent resident immigrants from Western Hemisphere countries in which Spanish is the national language. Since they are voluntary immigrants, political refugees, such as those from Cuba, and Puerto Ricans, who are citizens, are excluded. This definition also excludes Spaniards.
2. Spanish language population: As the Census Bureau defines it, "Persons of Spanish language comprise persons of Spanish mother tongue and all other persons in families in which the head or wife reported Spanish as his or her mother tongue."[2] In this study, this designation refers to the Census Bureau's data.
3. Alien: A foreign-born person who has not yet become a citizen. This category includes diplomats, students, refugees, immigrants as defined above, etc.
4. Occupational status: The occupational titles are categorized according to Duncan's socioeconomic index for occupations (also referred to as Duncan's scale).[3] This classification is based on the Bureau of the Census' classification scheme.
5. Earnings: Wages and/or salaries.

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[2] U.S. Bureau of the Census, Census of Population: 1970, Detailed Characteristics, Final Report PC(1)-D10, District of Columbia (Washington, D. C.: U.S. Government Printing Office, 1972), Appendix B, p. App-7.

[3] Appendix B, "Table B-1: Socioeconomic Index for Occupations in the Detailed Classifications of the Bureau of the Census: 1950," in Albert J. Reiss et al., Occupations and Social Status (New York: Free Press of Glencoe, 1961), pp. 263-275.

6. Economic success: The degree to which an immigrant participates in the host country's economy, primarily as a worker.[4] In this study economic success will be measured by occupational status as defined above and by earnings.
7. Economic absorption: See Economic success.
8. Economic integration: See Economic success.
9. English language proficiency: The immigrant's ability to communicate and understand the English language especially in regard to his employment. The emphasis is more on communicating than on the correctness of language usage. See below, p.108 , for measurement technique.
10. Educational attainment: The number of grades of schooling completed in formal educational institutions.
11. Formal or regular education: The age-graded hierarchy of elementary, secondary, and higher education; schooling which advances a person toward a certificate or diploma at one of the three levels.[5]
12. Non-formal education: "Education that does not advance to a higher level of the hierarchical formal school system."[6]

Purpose and Design of Study

The purpose of this study is to analyze the relationship between educational attainment and economic success for a group of urban male Spanish-speaking immigrants in the United States who previously have been neglected in the research. The specific research problems are to determine:

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[4] W. D. Borrie, The Cultural Integration of Immigrants (Paris: Unesco, 1959), p. 101. Also see p.32 below.

[5] Rolland G. Paulston, Non-Formal Education: An Annotated International Bibliography (New York: Praeger Publishers, 1972), p. ix; and U.S. Bureau of the Census, Census of Population, 1970, District of Columbia, op. cit., Appendix B, pp. App -8, App -9.

[6] Paulston, op. cit., p. ix.

1. The characteristics of the male Spanish-speaking immigrants in the District of Columbia and how they compare to other populations.
2. The relationship of Spanish-speaking immigrants to their U.S. occupations and to their earnings.
3. Whether or not Spanish-speaking immigrants are underutilized in the economy of the United States in terms of their previous occupations and education.
4. The implications the first three problems have for further research and for setting policy for manpower training programs which include Spanish-speaking immigrants.

Three research objectives are sought in order to attain this purpose. The first objective is to describe and determine the following selected characteristics for this group of immigrants:

1. Educational attainment in native country.
2. Non-formal education in native country and in the United States.
3. First and last occupation in native country and in the United States, and father's occupation.
4. Earnings in last occupation in native country, and first and present U.S. occupations.
5. Demographic characteristics - age, number of dependents, length of time in the United States, years in the labor force, order of birth, color and country of origin.
6. Cultural integration characteristics - English language proficiency, degree of community integration, North American friends, motive to migrate, intentions to remain, and problems as an immigrant.

The second objective is to test the hypothesis that educational attainment is an indicator of the degree of economic success for individuals in this group of immigrants. This is done by finding the statistical relationship between educational attainment and economic success, as measured by the status of the immigrant in the occupational hierarchy of the United States and by his earnings. Besides relating education to economic success directly, the relation between education and two other factors found in the literature to be important for absorption will also be determined. These factors are native occupation and English proficiency.

The third objective is to test the hypothesis that this group of immigrants is underutilized in the labor force. The usual way to determine underutilization has been by showing a lack of agreement between education and occupation. Since in this study it is not assumed that education reflects occupational worth *a priori* (the aim of the second objective is to test this assumption for this group of immigrants), another criterion in addition to the educational criterion will be used: a significant difference in the immigrant's former occupation in the native country and his present (or last) occupation in the United States. In addition, the educational attainment of immigrants and the educational attainment of non-immigrants who occupy the same occupational classification will be compared.

The *data gathering* procedure involves an interview survey of a sample of eighty-two Spanish-speaking male adult immigrants in the District of Columbia (see Chapter III). The following *hypotheses* are tested for null relationships on urban male, Spanish-speaking immigrants:

1. Educational attainment correlates positively with U.S. occupational status.
2. Educational attainment correlates positively with U.S. earnings.
3. Educational attainment correlates positively with native occupational status.
4. Educational attainment correlates positively with English expression proficiency.
5. Immigrants' native occupational status is significantly

different from their occupational status in the United States.

6. Immigrants and non-immigrants in the same occupational category will show significant differences in their levels of educational attainment.

The statistical analysis procedure aims at reducing the data to statistics in order to attain the research objectives and test the research hypotheses. The following methods are used to describe the characteristics of Spanish-speaking immigrants and to compare them to other populations: frequency distributions, percentages, measures of central tendency, z-tests, t-tests, chi-square tests and correlations. To test the first four hypotheses, correlations are calculated and examined for statistical significance. In addition, the partial correlation technique forms the basis for isolating the direct net effects of the independent variables. This technique will allow analogies to Blau and Duncan's findings (see Chapter II) since the partial correlations are conceptually similar to path analysis. This present study is limited to analyzing the role of schooling only and not all determinants of economic success. The fifth and sixth hypotheses are tested respectively by the chi-square method and by the z-test as applied to the differences between the means. All tests for statistical significance are taken at the .05 level of probability.

The principal source of the statistics for the tests are the tabulated results in Table 4.1, containing the means, medians and standard deviations of most of the variables, and Table 4.2, the correlational matrix. At other places throughout the study, the sources of the data are presented in tables of frequency distributions. These results were generated primarily by computer programs.[7]

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[7] The following statistical package and library program were used: Suziedelis, Antanas, SIFT II: A Manual for Statistics by Interaction with Files from Terminal (Washington, D. C.: Catholic University of America, Computer Center, November, 1972); Multiple Linear Regression - Up to 20 Variables (Silver Spring, Md.: Dialcom, Inc.).

Overview of Report

There are six remaining chapters in the report. In Chapter II, the theoretical background for the study is developed from the related research. Chapter III describes in detail the sampling procedure. The problems of dealing with "rare sampling elements" and how these problems were faced are described. The question of degree of representativeness is also considered. Chapters IV, V, and VI present and discuss the findings. Chapter IV deals with the characteristics of Spanish-speaking immigrants, the relationship of education to these characteristics, and comparisons with other populations in the District of Columbia. This chapter provides answers for the first research problem and objective (see above). Chapter V analyzes the relationship of education to occupation and to earnings. This chapter directs itself to the second research problem and objective. Chapter VI assesses the utilization of Spanish-speaking immigrant manpower in the District of Columbia. This assessment also sheds some light on the degree of economic absorption of Spanish-speaking immigrants. This chapter addresses the third research problem and objective. The last chapter, Chapter VII, briefly summarizes the study and formulates conclusions and implications. In that chapter, the fourth research problem is dealt with. Included there are also the limitations of the results which serve as a guide in accepting and generalizing from the conclusions.

CHAPTER II

BACKGROUND AND RELATED RESEARCH

Theoretical Orientation

The educational system, among other things, sets out to prepare youth for life in the adult society.[1] In this study it is proposed that the education received in one society is indicative of the degree of preparedness to live in another society. The theoretical support for such a contention is derived from two distinct research areas which are generally not considered in the same framework. One area is concerned with how individuals arrive at their position in society in relation to other individuals; this is a problem of social stratification. The other area deals with the problems of the integration of immigrants into the host society, especially into the economic sector.

The model of stratification influencing this study actually attempts to explain occupational stratification. It was presented in Blau and Duncan and expanded in Duncan, Featherman and Duncan.[2] There is no corresponding model which has been empirically verified in the area of immigrant integration. However, Patterson[3] has described how occupational absorption of immigrants in England takes place in Croydon, an industrial center in the London metropolitan area. The major theoretical approach of this present study is to conceive of Blau and Duncan's model as a model of the general case and to use Patterson's work along with related research to show that it has applicability to the specific case of immigrant integration. The role of education in contributing to occupational status in the general case is considerable. The primary aim of this study is to demonstrate that education is equally important in the specific case of immigrants who were educated in their native countries. In the sections to follow the general case is discussed and then results of related studies are presented to support the thesis that education is important for the economic success of immigrants and related populations.

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[1] For example, see Emile Durkheim, "Moral Education" (excerpts from Moral Education, Free Press, 1961), in Education: Structure and Society, ed. by B. R. Cosin (Baltimore: Penguin Books, Inc., 1972), p. 204.

[2] Peter Blau and Otis D. Duncan, The American Occupational Structure (New York: John Wiley and Sons, Inc., 1967); and Otis D. Duncan, David L. Featherman and Beverly Duncan, Socioeconomic Background and Achievement (New York: Seminar Press, 1972).

[3] Sheila Patterson, Immigrants in Industry (New York: Oxford University Press, for the Institute of Race Relations, 1968).

Education, Occupational Attainment and Earnings

The attempt to understand society in its totality has led to increased attention to certain social institutions of the society. For instance, an important aspect of society is how members are distributed in the positions required for the survival or cohesion of the society. Positions in the society exist independently of the individuals who occupy them. These positions are accorded power and prestige in relation to their functional importance in the society and the scarcity of available qualified personnel.[4]

In modern societies the positions are primarily (not totally) incorporated in the occupational structure. Thus, social stratification and social mobility are reflected by occupational stratification and occupational mobility which are encompassed in the process of occupational status attainment.[5] Historically, as the process of bureaucratization of functions occurred, a corresponding examination and diploma system developed to certify those who would qualify for the positions in the bureaucracy.[6] The preparation for certification is a function of the educational system.

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[4] Kingsley Davis and Wilbert Moore, "Some Principles of Stratification," American Sociological Review, Vol. 10, (1945), pp. 242-249.

There are two contending theoretical perspectives which explain how individuals are allocated in occupational positions. The functional theory holds that the needs of society are the determining factors in social behavior. Thus, the demand for skills determines who will be selected for a specific job.[7] The conflict theory suggests that groups of high social status exert their influence on the process of occupational selection. In this way, these groups are able to perpetuate themselves by limiting the entrance into the more prestigious occupations to the members of their own group.[8] Since education functions in society to provide skills and allocate individuals into occupations, the educational system has a fundamental role in any theory of stratification.[9]

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[5] Archibald Haller and Alejandro Portes,"Status Attainment Process," Sociology of Education, Vol. 46 (Winter, 1973), p. 54.

[6] Max Weber, "The 'Rationalization' of Education and Training," (excerpt from Max Weber: Essays in Sociology, Routledge and Kegan Paul, 1948) in Education: Structure and Society, op. cit., p. 226.

[7] Davis and Moore, op. cit. See also Richard Hall, Occupations and the Social Structure (Englewood Cliffs: Prentice-Hall, 1969), p. 298ff.

[8] R. Collins, "Functional and Conflict Theories of Educational Stratification," in Education: Structure and Society, ed. by B. R. Cosin (Baltimore: Penguin Books, Inc., 1972), pp. 175-199.

[9] Olive Banks, The Sociology of Education (New York: Schocken Books, 1968), p. 35.

Methodological Considerations

The conceptual framework guiding this study is largely influenced by Duncan, Featherman and Duncan's procedure for analyzing the process of occupational attainment in the United States.[10] They posit a four variable model of the attainment process in the socioeconomic life cycle, see Figure 1. In this basic model, father's occupation and education are the background (independent) variables; respondent's educational attainment is the intervening variable; and respondent's occupational status is the outcome (dependent) variable. Occupational attainment is explained by the temporal sequence of variables which are logically associated with occupation. Within this closed system of variables, it is possible to make causal statements about the properties of the model since the model is nothing more than a representation of reality.[11] Such statements are distinguished from statements about the validity of the model to the real world. Nevertheless, such a procedure makes possible the thorough examination of a limited number of variables which lead to a better understanding of the problem at hand.

Adding variables to this basic model creates extensions of the basic model. Extending the basic model is done by searching for the "mechanisms," or intervening variables, which explain the influence of the antecedent variables on outcome variables.[12] Thus, education is an intervening variable explaining how family background influences occupational status. Much of the research on occupational attainment is

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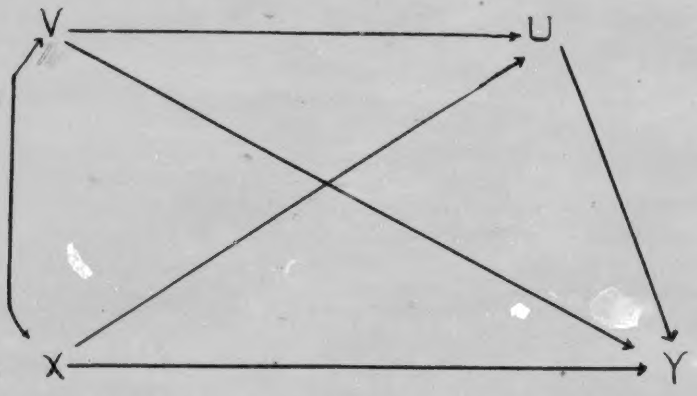
[10] Duncan, Featherman and Duncan, op. cit.

[11] Ibid., p. 9.

[12] Ibid., p. 4. See also Haller and Portes, op. cit., p. 54.

Fig. 1. The Basic Model of Occupational Achievement



Y = Respondent's Occupation

U = Respondent's Education

X = Father's Occupation

V = Father's Education

From: Duncan, Featherman, and Duncan, _op. cit._, p. 8.

directed toward uncovering these intervening variables since the basic relationship between family background, educational attainment, and occupational status has been verified in different studies of the American population.[13]

In the cross-cultural application of this framework, undertaken in this present study, the relationships among family background, educational attainment and occupational status have not been verified. Therefore, this study sets out to determine the feasibility of including educational attainment in such a model for an immigrant population who were educated in their native countries.

The present study will utilize the product-moment correlation technique to find significant two-variable relationships and the partial correlation technique to statistically "control" third and fourth variables. Such a procedure contrasts with the method of path analysis employed in most of the current research on occupational attainment in the United States. Path analysis is particularly suited for the verification of models because it assigns path coefficients, which are standardized partial regression coefficients (beta weights), to the paths of determination.[14] Path coefficients "indicate *how much change* in the dependent variable is produced by a standardized change in one of the independent variables when the others are controlled" (italics in original).[15] Partial correlations differ from path coefficients in that a partial correlation is "a measure of the *amount of variation explained* by one independent variable after the others have explained all they could" (italics in original).[16]

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[13] Haller and Portes, *op. cit.*, p. 65.

[14] The product-moment correlation coefficient, r, is also used in path analysis. For a full exposition of path analysis, see Otis Dudley Duncan, "Path Analysis," *American Journal of Sociology*, Vol. 72 (1966), pp. 1-16.

[15] Hubert M. Blalock, Jr., *Social Statistics* (New York: McGraw-Hill Book Company, 1972, Second Edition), p. 453.

[16] *Ibid.*

The two measures are conceptually the same and they are both in the regression analysis family of statistical techniques. Partial correlations are as useful as path coefficients in identifying direct and indirect effects in models.[17] Since the primary aim of this study is to establish that certain two-variable relationships do in fact exist in the data, the exploration for intervening variables is considered a secondary purpose. In view of the exploratory nature of the search for intervening variables, partial correlations seem preferable to other measures since partial correlations are fairly familiar statistics and since they evaluate the importance of the independent variable by indicating the amount of variation it explains in the dependent variable.

The validity of the statistical measures depend in part on the limitations imposed by the basic assumptions underlying the measures. Two basic assumptions[18] for the regression analysis techniques are that the relationship be linear and that the variables be additive, i.e., have no interaction effects. In studies using different data, the relationships are only slightly better described if linearity is not assumed between education and occupational status.[19] In assessing the additive condition Blau and Duncan report a study by Hill which shows slight nonadditive effects between occupation and income.[20] Similarly, Jencks found only a slight interaction effect for the relationship between education and income for men of differing backgrounds but none for other status variables.[21] The advantages of using multiple regression techniques to describe relationships is viewed by these investigators as far outweighing the slight distortions that may arise by relaxing the assumptions.

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[17] Blalock demonstrates how partial correlations can be applied to test for spurious relationships in causal models, Ibid., p. 442ff. See also, H. M. Blalock, "Four-variable causal models and partial correlations," The American Journal of Sociology, Vol. 68 (1962), pp. 182-194.

[18] A third basic assumption, the condition of heteroestadicity, was mentioned in the literature but was either ignored or not believed to be a major problem. If this assumption is relaxed, the accuracy of the prediction (and description) will vary along the distribution of the dependert variable.

[19] These calculations are discussed in Blau and Duncan, op. cit., p. 145; Haller and Portes, op. cit., p. 74; and Jencks, op. cit., p. 336.

[20] Blau and Duncan, op. cit., p. 139.

A final consideration is the procedure used to measure occupational status. Reiss et al. carried out a study which asked a nationwide sample in 1947 to rank occupations in order of their prestige.[22] The prestige ratings of occupations seem to be stable over time[23] and among developed countries.[24] The 1947 study, however, secured prestige ratings for only forty-five occupations. Duncan developed a scale derived from the prestige ratings which estimates prestige scores for 416 detailed occupation titles.[25] This was done by predicting the prestige scores using a regression analysis equation in which education and income were the independent variables.[26] This scale actually denotes socioeconomic status scores rather than prestige, although the two are closely related. The innovation of Duncan's Socioeconomic Status Index of occupations operationalizes the status hierarchy which allows for empirical testing of theories of status attainment.[27]

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[21] Christopher Jencks, et al., Inequality: A Reassessment of the Effect of Family and Schooling in America (New York: Basic Books, 1972), p. 337.

[22] Albert J. Reiss, et al., Occupations and Social Status (New York: Free Press of Glencoe, 1961).

[23] Robert W. Hodge, Paul M. Siegel, and Peter H. Rossi, "Occupational Prestige in the United States, 1925-1963," The American Journal of Sociology, Vol. 70, No. 3 (November, 1964), pp. 286-302.

[24] Alex Inkles and Peter H. Rossi, "National Comparisons of Occupational Prestige," in Contemporary Society, ed. by Toby Jackson (New York: John Wiley and Sons, 1964), pp. 234-243.

[25] Otis Dudley Duncan, "A Socioeconomic Index for All Occupations," in Reiss, op. cit., pp. 109-138.

Models of Occupational Status Attainment

Blau and Duncan's model of occupational status attainment employs five variables. Their hypothesis is that two family background variables (father's occupation and education) determine in part the respondent's education, first occupation and present (1962) occupation. The net effects of education, independent of family background, determine in part first occupation and present occupation. The effects of first occupation independent of the other variables partially determine present occupation. Blau and Duncan tested this model on a 1962 cross-sectional sample of 20,700 respondents which is representative of the nation's white non-farm adult males 20 to 64 years of age. The model explained 42 per cent of the variance at the time of present (1962) occupation but, more importantly, the paths of causation as posited in their model were generated and their configuration was confirmed.[28]

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[26] Duncan is senstive to the implied circularity of correlating educational attainment with an occupational status index which also contains education as one of its two components. In the Detroit Area Study, data was coded both in occupational prestige scores (secured from a recent study of occupational prestige of a large number of occupations) and in Duncan's socioeconomic index. The correlations with education were .53 and .55, respectively. Apparently, the index as an estimate of prestige is not limited in use by having education as one of its predictors (Duncan, Featherman, and Duncan, op. cit., p. 49): See also, Blau and Duncan, op. cit., pp. 125-126.

[27] Haller and Portes, op. cit.

Other research has extended this model by including additional variables as background variables and intervening variables. The principal results of this research follow.

Background Variables

Duncan, Featherman, and Duncan examined extended models using primarily cross-sectional samples. The models included background variables in addition to father's education and occupation (hereafter referred to as "social origin"). National origin is not a disadvantage for second generation European Americans except for those with fathers born in Italy. Americans with fathers born in Latin America (mainly Mexico) were disadvantaged in the occupational structure.[29] These findings represent the direct effects of national origins when social origins and educational attainment are controlled. Race (black or white) produces differences in both occupational and educational achievement even when social origins and number of siblings are controlled.[30] The number of siblings in the respondent's family depresses educational attainment but showed no important influence on occupational status. Additionally, the sex of siblings had no effects whatsoever.[31]

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[28] Blau and Duncan are not very disturbed at, what may seem to be, the low amount of explanation; see Blau and Duncan, *Ibid.*, p. 174.

[29] Duncan, Featherman, and Duncan, *op. cit.*, p. 52. Also see below in the text.

[30] *Ibid.*, Table 4.3.

[31] *Ibid.*, p. 62.

Family stability makes about one year's difference in schooling and somewhat less difference when the number of siblings and social origins are taken into account.[32]

Jencks and associates provide a model which interrelates variables to produce hypothetical background factors. A family environment factor and childhood intelligence have direct paths to educational attainment.[33]

Intervening Variables

Additional variables which can be experientially located between the background variables and educational attainment and occupational status help to explain the dynamics of the status attainment process. The Wisconsin model attempts to define the transmission of social origins by including psychological variables commonly associated with this process.[34] The Wisconsin model extends the basic model by adding the five following variables: mental ability, significant others' influence, academic performance, educational aspirations and occupational aspirations. The addition of these variables enables this model to explain seven per cent more of the variance in first occupation and more than twice the variance in educational attainment than the five-variable model of Blau and Duncan.[35]

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[32] *Ibid.*, pp. 63-64.

[33] Jencks, *op. cit.*, Figure B-7.

[34] Haller and Portes, *op. cit.*, pp. 51-91; See also, William Sewell, Archibald Haller and George Ohlendorf, "The Educational and Early Occupational Status Attainment Process; Replication and Revision," *American Sociological Review*, Vol. 33 (1970), 1014-1027.

[35] The comparison is limited by differences in samples (national versus regional) and slight differences in measurement. Haller and Portes note, however, that in spite of very different research designs relationships among status variables in the two studies are associated at similar levels. Thus, the empirical results are fully substantiated, Haller and Portes, *op. cit.*, pp. 61-65.

In the Wisconsin model educational attainment is determined by significant others' influence (parental encouragement toward college, teacher's encouragement and best friend's college plans), academic performance (the only variable which mental ability affects directly), and level of educational aspirations. Social origin (in this case an index based on father's education and occupation, mother's education, and family income) has direct effects only on significant others' influence and has no indirect effects whatsoever. The respondent's first occupational status is determined by educational attainment and to a lesser degree by the level of occupational aspirations. In this model, these are the only two variables that have direct paths to first occupational status.[36]

The findings generated by the Wisconsin model "seem to emphasize the importance of psychological formations and their consistent support from those the youth considers important."[37] The social background of the family "sets limits on the pool of potential significant others and the nature of their orientations."[38] Hence, youths tend to receive reinforcement for aspirations which were first generated by their family background by associating with like-minded individuals.

The importance of aspirations or occupational plans and their fundamental role in the decision-making process led Ginzberg to formulate the concept of "irreversibility" of occupational choice.[39] During the time of adolescence individuals are obligated to make certain choices about their education which will ultimately set the direction of their occupational career. These choices in effect influence later options thus putting into motion a process which rather thoroughly entrenches the individual into a career pattern. This concept of "irreversibility" also operates once the individual has embarked upon his occupational career. That is, preceding occupations have more impact than education and other variables upon the present occupation (see below) indicating that the act of entering an occupation limits later options for entering other types of occupations.

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[36] Ibid., Diagram 2, p. 59.

[37] Ibid., p. 62.

[38] Ibid.

[39] Eli Ginzberg, The Development of Human Resources (New York: McGraw-Hill, 1966), p. 54.

The importance of the intervening variables used in the Wisconsin model were generally supported by the comprehensive research on extended models by Duncan, Featherman, and Duncan.[40] However, some psychological measures of achievement orientation were not found to be important. These measures consisted of subjective achievement, commitment to work and the importance of getting ahead. The model was tested on cross-sectional data.[41] However, using data from part of a national probability sample, Duncan, Featherman, and Duncan concluded tentatively that achievement motivation (n Ach, need for achievement) derived from Thematic Apperception Test results has an effect on occupational status but not on educational status.[42]

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[40] Their research is by far the most exhaustive attempt to test extended models and uncover the "mechanisms" of status transmission. For detailed analysis of selected variables, including many of those included in the Wisconsin model, see Duncan, Featherman, and Duncan, op. cit., Chapters 5, 6, and 7.

[41] Ibid., p. 154. See also, David L. Featherman, "Achievement Orientations and Socioeconomic Attainment," American Sociological Review, Vol. 37 (1972), 131-143.

[42] The authors consider their findings suggestive since they were not able to locate all the data. Their findings, however, do support in some ways the original study. Ibid., p. 128.

Whereas intervening variables have been found which completely mediate the influence of background variables on educational attainment, comparable success in identifying the mechanism of status transmission from education to occupation has not been achieved. A measure of adult mental ability subsequent to education was found to have a direct path to occupational status. Furthermore, part of the effects of educational attainment on occupational status are transmitted through this measure of adult mental ability.[43]

Featherman's cross-sectional metropolitan data covers four points in time during occupational careers which are about twenty years long. He finds that father's occupation has "lagged effects" during this time period. The effects of father's occupation dip during the second and third points in time but at the fourth and final check (occupation at mid-career) they rise to almost the equivalent strength of the first occupational check, occupation at marriage.[44] Thus, the background variable seems to have an independent effect since the relationship between education and occupation loses strength during the career life of the individual while father's occupation does not. Blau and Duncan similarly found a declining strength in the association between education and occupation.[45] Nevertheless, in Featherman's analysis education is second in strength only to the occupation variables as a determinant of each occupation and actually has more effect than occupation-at-marriage on occupation-at-mid-career, the last occupation for which there was data.[46]

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[43] Ibid., Figure 5.9. See also, Jencks, op. cit., Figure B-7.

[44] David Featherman, "A Research Note: A Social Structural Model for the Socioeconomic Career," American Journal of Sociology, Vol. 77 (1971), p. 302.

[45] Blau and Duncan, op. cit., p. 304. For their results from using synthetic cohorts to determine five points in the occupational career, see Ibid., p. 184.

The respondent's family characteristics contribute to describing how the effects of educational attainment influence occupational status. Marital stability, i.e., intact or broken marriages, was found to influence occupational status and also to be related to educational attainment.[47] The number of children and the timing of children were both disadvantages in the attainment process and negatively correlated with educational levels.[48] The socioeconomic characteristics, intelligence, and achievement orientation (based on responses to questions in a questionnaire) of wives contributed virtually nothing in explaining the variation in occupational status after the socioeconomic variables of the respondents were taken into account.[49]

To summarize briefly, research on the occupational attainment process using mathematical models has progressed considerably from the basic four-variable model. Background variables yielding more detailed descriptions of the attainment process have consisted of race, number of siblings, family stability, mental ability, total family environment influence on education and an index combining father's occupation, father's education, mother's education and family income. The effects of social origin and mental ability appear to determine education through significant others' influence and academic performance. Not all the psychological variables tested in the literature resulted in a better model. Education affects present occupational status directly and indirectly through such variables as adult mental ability, the intervening occupations, marriage stability, number and timing of children. Socioeconomic and certain psychological characteristics of the respondent's wife had no influence on occupational status when the socioeconomic characteristics of the respondent were controlled. As of yet, there is not as detailed a description of the status transmission from educational attainment to occupational status as there is from background variables to educational attainment.

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[46] Featherman, op. cit., p. 302.

[47] Duncan, Featherman and Duncan, op. cit., p. 239.

[48] Ibid., Table 8.16 and p. 249.

[49] Ibid., p. 178.

The Functional and Conflict Theories of Stratification

In light of the two competing theories of occupational stratification (see above), the results of the model-building research are far from definitive. Blau and Duncan estimate that their five-variable model, consisting of father's education and occupation, respondent's education, first occupation, and 1962 occupation, account for forty-two per cent of the variation in occupational status.[50] Educational attainment accounted for twenty-four per cent of the variation in occupational status when the effects of the background variables were controlled and thirty-five per cent when no variables were controlled. The authors conclude, "Far from serving in the main as a factor perpetuating initial status, education operates primarily to induce variation in occupational status that is independent of initial status" (italics in original).[51] The finding of relatively large independent effects of education tends to support the functional perspective since allocation into occupational positions seem to occur on the basis of the skill of the employee as measured by educational attainment.

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[50] Blau and Duncan, op. cit., p. 202.

[51] Ibid., p. 201.

Nevertheless, eighteen per cent of the variation in occupational status is determined by the background variables, eleven per cent of which is mediated by educational attainment.[52] The extent to which education operates to perpetuate status provides some support for the conflict theory of stratification which contends that employment is based on the status origins of the applicant primarily and only secondarily on his technical ability.[53]

Related literature and research using methods other than model building contribute to the knowledge of how educational attainment is translated into occupational status. This additional research, however, does not completely substantiate either theory but rather seems to indicate that both theories operate concurrently. Killingsworth concluded from an examination of unemployment data of 1950, 1957, and 1962 that automation is causing a "twist" in the demand for labor. While the demand of non-skilled workers is creating a serious crisis in unemployment, the demand for skilled workers is almost at the point of "overfull" employment in which there is a serious lack of skilled persons to fill the many newly created positions.[54] Ferrucci has also noted this change in the occupational structure caused by technical advances, calling it structural "push."[55]

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[52] Ibid., p. 202.

[53] Collins, op. cit., p. 184.

[54] C. C. Killingsworth, "The Effects of Automation on Jobs," in Education: Structure and Society, ed. by B. R. Cosin (Baltimore: Penguin Books, Inc., 1972), pp. 88, 93-94. See also, August Bolino, Manpower and the City (Cambridge, Mass.: Schenkman Publishing Company, 1969), p. 30.

On the other hand, studies of the decades preceding the 1960's show that much of the rise in educational requirements was a result of supply rather than demand. Folger and Nam have estimated that in the decade of the 1940's and 1950's, 85 per cent of the rise in educational attainment was accompanied by the raising of educational requirements in the occupations while the remaining 15 per cent was associated with the structural "twist,", i.e., new jobs requiring more technical training.[56] Berg attempted to determine if the raising of educational requirements for occupations in the 1960's was a result of the real demand for more technical and difficult skills or simply a response to an oversupply of educated workers. He found the latter to be generally true and particularly true of the middle level jobs.[57]

In a study of approximately one-third of the larger firms in the San Francisco, Oakland and San Jose areas, Collins found that educational requirements were highest in the organizations emphasizing respectability and loyalty.[58] Technical change affected educational requirements in the smaller firms in the sample that were more locally oriented and emphasized profit-making rather than professional or public services. Tests of association indicated that higher educational requirements are related more strongly with those firms emphasizing respectability than profits.[59]

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[55] Robert Perrucci, "Education, Stratification and Mobility," in On Education - Sociological Perspectives, ed. by Donald A. Hansen and Joel E. Gerstl (New York: John Wiley and Sons, Inc., 1967), pp. 115-116.

[56] J. F. Folger and C. D. Nam, "Trends in Education in Relation to the Occupational Structure," Sociology of Education, Vol. 38, No. 1 (1964), pp. 28-29.

[57] Iver Berg, Education and Jobs: The Great Training Robbery (New York: Praeger Publishers, 1970), p. 59.

[58] Collins, op. cit., p. 184.

There is some evidence[60] that employers rely on educational levels to help them screen employees on the basis of employee's affiliation to social class values. College degrees, for instance, serve as an indication of motivation (a possible concomitant of social class) for many employers rather than an assurance of technical skill. Educational levels also indicate to employers the attitude and demeanor of the applicant. High school diplomas and college degrees usually indicate adherence to middle class values.[61]

Also, employers may turn to educational credentials as a means of rationalizing entrance into occupations with limited numbers of positions. In such cases, this tends to be an arbitrary decision and not based on any consensus that education increases worker productivity.[62] Further, employers may feel that better educated workers raise the prestige of the organization or are more amenable to the work situation and are easier to work with.[63]

In summary, educational attainment is linked to initial occupational status mainly through the mechanisms of the labor market, including hiring practices. There is the effect of supply and demand which creates changes in the occupational structure by responding to technical advances and to the supply of educated manpower. Additionally, educational attainment is a source of information to the employer about the applicant's technical skill, and, perhaps more importantly, his social class identification and the associated attitudes and motivations. Hall describes how the functional and conflict theories interplay in the process of occupational attainment: "That is, once a person has gained entrance to an occupation, either by inheritance of the occupational level or further education than might have been expected according to his background, his movement or lack of movement within the system is based upon his performance, his contribution to the system, and the scarcity of his skills."[64]

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[59] Ibid., p. 192.

[60] Collins has compiled research findings that support the conflict perspective, Ibid., pp. 188-195.

[61] Ibid., p. 189.

[62] Jencks, op. cit., p. 183.

[63] Ibid.

Education and Earnings

This study is also concerned with the relation of education to earnings. Significant correlations between education and earnings have been observed in diverse samples many times.[65] Since the "birth" of economics of education as a specialized field in 1960, in the form of a paper read by Theodore Schultz,[66] the study of education as manifested in human capital and economic growth has received considerable attention.[67] Obviously the basis for the association of education and income relies on the mediating factors of occupation and ability.[68] Jencks estimates that the effect of education on income is totally mediated by occupation and adult mental ability.[69] Thus, much of what has been said about the determination of occupational status attainment would essentially apply in explaining the relationship between education and earnings.

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[64] Hall, op. cit., p. 395.

[65] For example, see Jencks, op. cit., p. 337; Duncan, Featherman, and Duncan, op. cit., p. 39; Alan Sorkin, "Occupational Earnings and Education," Monthly Labor Review, Vol. 91, No. 2 (1968), p. 7; Herman P. Miller, Income Distribution in the United States (Washington, D. C.: Government Printing Office, 1966), pp. 124-125; and James Morgan and David Martin, "Education and Income," in Education and the Economics of Human Capital, ed. by Ronald Wykstra (New York: The Free Press, 1971), pp. 177-195.

Featherman finds in his analysis of longitudinal data that the independent effects of educational attainment become more strongly associated with earnings during the occupational career (up until about mid-career).[70] He believes that early occupational experimenting and possibly the conscious choice of entering occupations with greater long-range earning potentials than short-range ones may explain this phenomenon.

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[66] M. Blaug, Economics of Education: Selected Readings #1, ed. by M. Blaug (Baltimore: Penguin Books, Inc., 1968).

[67] For review of activities in this area, see W. G. Bowan, "Assessing the Economic Contribution of Education," in Economics of Education #1, op. cit., pp. 101-134.

[68] For example, see Reiss, op. cit., p. 84; and Gary Becker, Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education (New York: National Bureau of Economic Research, 1964), p. 126.

[69] Jencks, op. cit., p. 338.

[70] Featherman, "A Research Note," op. cit., p. 302.

The over-all conclusion is that educational attainment plays a central role in the general case of the occupational attainment process and subsequently it affects earnings for the individual. This conclusion is an inducement to expect that the same should be true in a specific case. In the following section, evidence for expecting an association between education and occupation among immigrants will be provided from related studies.

Education and Economic Absorption

The goal of this section is to furnish support for the thesis that Duncan, Featherman, and Duncan's basic model of occupational status attainment, as far as the role of education is concerned, is applicable to the specific case of immigrants. There are some commonalities in the process of status attainment for both immigrants and non-immigrants. In regard to these commonalities, education should be as important for immigrants as for non-immigrants. On the other hand, there are basic differences in the attainment process of immigrants and non-immigrants. Many of these differences are obstacles in the attainment process only to the extent that the immigrants cannot adjust (disregarding "artificial" obstacles, such as discrimination, for a moment). The ability to adjust is a possible function of educational attainment.[71] Therefore, education for the immigrant is an important force in the normal occupational status attainment process and in indicating the ability to overcome these obstacles to individual adjustment.

Economic absorption has been cited as a first step toward the cultural integration of immigrants.[72] It entails

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[71] Fullan and Loubser, op. cit.

[72] Joseph Spengler quoted in W. D. Borrie, The Cultural Integration of Immigrants (Paris: Unesco, 1959), p. 101.

"either the mere adoption of the occupational pattern of the country of immigration or the enrichment of this pattern through the introduction of new economic activities."[73] Implied in this statement is "the immigrant's capacity not only to secure employment but also to sustain his employment."[74]

Patterson studied in depth the economic absorption of immigrants in an industrial center on the outskirts of London. She found working capacity, or technical skill, as probably the most important of the "internal" factors.[75] Associated with this capacity to work are characteristics of immigrants which are indicative of the "suitability" to work. These characteristics can be grouped into three divisions: social and cultural background, attitudinal factors, and quantitative criteria. Patterson's description of the characteristics of immigrants which affect the absorption process[76] contains all the important ones which have been referred to in the review of literature. This description along with the related literature will be examined in order to establish the rationality of expecting significant associations between these factors and education.

Working Capacity

Working capacity can be defined as the ability to per-form the task or carry out the responsibilities required of a job. One of the functions of education is labor force preparation[77] and so it is expected that the level of education should signal some degree of working capacity. Of course, except for vocational education programs and professional training, most formal education does not prepare its students for any specific job. Training for a particular job is usually provided by the firm. Firms undertake on-the-job training of both a specific and a general nature[78] and this enhances even more the employee's working capacity. Nevertheless, there is some indication that employers still value general formal education because it indicates the capacity of the employee to learn in on-the-job training and the flexibility to adjust to the changing situations accompanying technical innovations.[79]

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[73] Joseph Spengler, quoted in Ibid.

[74] Borrie, op. cit., p. 101.

[75] That is, factors associated with the immigrants themselves as opposed to "external"factors in the host country's society. Patterson believes that the external factor of labor shortage in the host society is probably the most significant element in the economic absorption process. Patterson, op. cit., p. 250.

[76] Ibid., pp. 250-261.

Social and Cultural Background

This category includes such characteristics as values, customs, social class origins, educational background, religion, and language. These characteristics manifest themselves in the immigrant's familiarity with urban life and industry. This familiarity seems to be more important than even "conspicuous differences in everyday behavior and cultural patterns" even though these differences may create friction in the short run.[80] This emphasis on being urbanized is echoed in a study by Inkles of "modern" men in developing countries. His index of modernity correlates with education more strongly than with any other variable measured, even factory experience.[81]

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[77] D. F. Swift, The Sociology of Education: Introductory Analystical Perspectives (London: Routledge & Kegan Paul, 1969), p. 102.

[78] Becker, op. cit., p. 8.

[79] William Taylor, "Mass Secondary Education in an Industrial Society," in Basic Readings in the Sociology of Education, edited by D. R. Swift (London: Routledge & Kegan Paul, 1970), p. 266.

[80] Patterson, op. cit., p. 56.

In general, it would seem that educational level would be a good indicator of those elements of social and cultural background which would be compatible with the industrialized host country. Part of this association is probably based on the observation by Pedro Rosello who suggested, after comparing national educational systems: "The political differences notwithstanding, educational systems all over the world are tending to converge under the impact of common social and economic forces."[82] As school systems become more similar, it is likely that they will impart the same norms, a function of the school that is little recognized.[83]

A cultural element which is the most obvious mark of a foreigner is the inability to speak the language or dialect of the host country.[84] Some obstacles are so great that they override the advantage of knowing the language of the host country upon arrival. In an unreceptive society, for example, immigrants to Canada who were monolingual French speakers apparently adjusted as successfully or better than immigrants who spoke both French and English.[85] Nevertheless,

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[81] Inkles, op. cit., p. 212.

[82] Pedro Rosello paraphrased in Harold J. Nash and Max A. Eckstein, Toward a Science of Comparative Education (New York: The MacMillan Company, 1969), p. 38.

[83] Robert Dreeben, "The Contribution of Schooling to the Learning of Norms," The School in Society: Studies in the Sociology of Education, edited by Sam D. Sieber and David E. Wilder (New York: Free Press, 1973), pp. 62-77.

[84] Patterson, op. cit., p. 254.

[85] Naomi Moldofsky, "Language - A Passport to Successful Adjustment? The Quebec Experience (Or Some Implications of Language to the Process of Immigrant Adjustment)", International Migration, Vol. 10, No. 3 (1972), pp. 132-135.

Cuban refugee lawyers named the language barrier as one of their greatest obstacles to working in their profession in the United States.[86] Furthermore, there was an association between those who mentioned this problem and age. In a study of Mexican-American migrants, age was also found to be associated with the use of English in the home, as was educational level.[87] Thirty-five years of age seemed to be the cut-off point for the exposure to English to effect the home language of the individual. The educational level of immigrants in Canada and their English language fluency were significantly associated,[88] a further indication that education should be an indicator of language ability. A study of Hungarian refugees in Canada yielded a significant correlation between educational level and language improvement.[89] Age was also revealed as a correlate of language improvement in that study. Thus, except where obstacles to adjustment are great, the ability to learn (or prior knowledge of) the language of the host country is important for economic absorption. Furthermore, education seems to be associated with this ability.

Attitudinal Factors

Expectations, motivations and those qualities which shape the predisposition of the immigrant to adjust to his new environment will affect the degree of his economic absorption. It is generally believed that the predisposition of the immigrant to change is as necessary as is "the predisposition of the receiving society to recognize differences."[90] Educational background often induces "a flexible approach and an adaptability that helps the immigrant to adjust and be accepted in his new job."[91] Little is known about the causal relationship between education and adaptive functioning in human beings but it would seem that there are a lot of features in the educational process which would promote adaptive functioning.[92] In many cases, the monumental effort required from students in adapting to the classroom situation itself is a compelling reason to believe that the school experience induces flexibility.

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[86] Raul Moncarz, "Cuban Lawyers: Ten Years Later," International Migration, Vol. 10, No. 3 (1972), p. 110.

[87] Thomas J. Scheff, "Changes in Public and Private Language among Spanish-Speaking Migrants to an Industrial City," International Migration, Vol. 3 (1965), pp. 82-83.

[88] Anthony H. Richmond, Post-War Immigrants in Canada (Toronto: University of Toronto Press, 1967), pp. 141-143.

[89] Klaus Weiermair, "Economic Adjustment of Refugees in Canada: A Case Study," International Migration, Vol. 9, No. 1/2 (1971), Table 9.

Educational background, of course, can raise expectations beyond what is realistically tenable. Portes found that Cuban refugees experienced less cultural assimilation in the United States if they were in the highest educational and socioeconomic echelons in Cuba.[93] A study of Puerto Rican migrants tends to support the idea that immigrants self-select themselves and that their educational level is associated with this process. Islanders in 1960 had a mean education of 4.8 years, while migrants who stayed in the U.S.

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[90] Borrie, op. cit., p. 94.

[91] Patterson, op. cit., p. 254.

[92] Fullan and Loubser, op. cit., p. 279.

[93] Alejandro Portes, "Dilemmas of a Golden Exile: Integration of Cuban Refugee Families in Milwaukee," American Sociological Review, Vol. 34, No. 4 (1969), p. 514.

had a mean of 7.9 and those returning had 8.6.[94]

Motivation of immigrants, in the form of striving to achieve greater mobility, and its relationship to education can only be deduced from the data since there are apparently no studies of the achievement motivation of migrants and immigrants. In a cross-sectional sample, the white foreign born and their sons (white ethnics) have a lower ratio of those finishing over those entering at the high school level than men of native white parentage in northern United States. Conversely, this ratio is greater for white ethnic groups than the sons of natives at the college level.[95] Blau and Duncan conclude: "Once white ethnics overcome their foreign origin handicaps, they are more likely than comparable men of native parentage to continue their education to advanced levels."[96] The higher proportion of white ethnic dropouts at the high school level reflect the "prescribed" norm for that group. But for the highly motivated, education is the most accessible means of mobility. Hence, the ethnic group's greater educational achievement is possibly a manifestation of its higher motivation than that of comparable men of native parentage.[97]

Migrants and the white ethnic minority also express their high achievement motivation in occupational attainment. Migrants who are native white, second generation native whites and foreign born achieve greater occupational attainment than non-migrant native whites when their educational attainment, first job, and father's occupation are held constant.[98]

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[94] Eva E. Sandis, "Characteristics of Puerto Rican Migrants to, and from, the United States." *International Migration Review*, Vol. IV, No.4 (1970), pp. 54-55.

[95] Blau and Duncan, *op. cit.*, Table 6.9.

[96] *Ibid.*, p. 235.

[97] *Ibid.* Men whose fathers were born in Latin America (mostly Mexico) have lower educational and occupational achievement than comparable natives and ethnics but greater than blacks. Beverly Duncan and Otis Dudley Duncan, "Minorities and the Process of Stratification," *American Sociological Review*, Vol. 33 (1968), pp. 356-364.

Blau and Duncan hypothesize that either migrants have more achievement motivation or initiative than non-migrants before migrating or their contact with diverse environments promotes these qualities.[99]

Attitudes of Mexican-American migrants have been measured in terms of world view, i.e., optimistic or futilistic. This measure is significantly associated with their economic absorption and with their education.[100] Furthermore, attitudes and propensities to act in ways defined to be "modern" are associated with education in a sample drawn from six developing countries.[101] In a theoretical model explaining the international mobility of highly trained immigrants, it is reasoned that at the university level the study of languages and the greater contact with foreign culture through course work would tend to form a cosmopolitan attitude in students and thereby lower the "psychic costs" of immigration.[102]

The immigrant's attitudes, motivations and expectations tend to promote his economic absorption. A flexible disposition, attitudes, values that are consonant with urban life and achievement motivation are characteristics mentioned in the literature as being associated with economic absorption. Education is linked with all these characteristics and, therefore, is a likely predictor of attitudinal predisposition toward economic absorption.

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[98] Blau and Duncan, op. cit., p. 235.

[99] Ibid., pp. 238, 256.

[100] Shannon and Morgan, "The Prediction of Economic Absorption and Cultural Integration among Mexican Americans, Negroes and Angloes in a Northern Industrial Community," Human Organization, Vol. 25, No. 2 (Summer, 1966), p. 158.

[101] Inkles, op. cit., p. 212.

[102] H. G. Grubel and A. D. Scott, "Determinants of Migration: The Highly Skilled," International Migration, Vol. 5, No. 2 (1967), p. 135.

Quantitative and Demographic Factors

Age tends to lessen the ability to be flexible, at least, in terms of learning English.[103] Length of stay, sex, immigrants' number and their proportion to natives are factors which will affect the immigrants' economic absorption. Length of stay and English proficiency for ethnic groups were almost perfectly associated in an economic historical study of immigrants.[104] In most studies, the effects of these variables have been controlled since they distort the relationship between education and occupation, although they may be important in explaining the over-all process.

Education and Economic Absorption: Related Studies

Economic absorption, as indicated by occupation and income, depends on the immigrant's technical skill, social and cultural background, attitudinal factors and quantitative and demographic factors. There is sufficient evidence to believe that educational attainment is either an indicator or direct determinant of many of these factors, as has been discussed above. The present study will attempt to verify the relationship of education to occupation and to income for

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[103] Moncarz, op. cit., pp. 113-114; Scheff, op. cit., pp. 82-83.

[104] Higgs, op. cit., p. 427.

Spanish-speaking immigrants. There are several studies of immigrants and related populations which have already verified this association.

Immigrants, refugees, and Mexican-Americans have earnings associated with their educational levels but Mexican-American migrants do not. Historical data of 1909 shows that both literacy and the ability to speak English explains 78 per cent of income of ethnic group aggregates.[105] Immigrants in Canada in a nationwide sample have incomes associated with their educational levels.[106] Educational attainment is associated with income for Hungarian refugees migrating to Canada between 1956-1958.[107] Using the chi-square method revealed that in Racine, Wisconsin, Mexican-American migrants' family income is not significantly related to the males' education, even when "length of time in the community" is controlled.[108] The family income of Mexican-Americans in a California county increases as does the educational level of the family head (and only worker). However, economically, the rate of return to investing in a high school diploma is half as great as the return to dropping out at tenth or eleventh grade and entering into the labor force.[109]

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[105] Ibid., p. 425.

[106] Richmond, op. cit., pp. 76-77.

[107] Weiermair, op. cit., Tables 9 and 10.

[108] Lyle Shannon and Elaine Krass, "The Urban Adjustment of In-migrants: The Relationship of Education to Occupation and Total Family Income," Pacific Sociological Review, Vol. 6, No. 1 (Spring, 1963), p. 41.

[109] Philip M. Blair, "Rates of Return to Education of Mexican-Americans and European-Americans in Santa Clara County, California," Comparative Education Review, Vol. 17, No. 1 (February, 1973), p. 40.

There is some indication that immigrants and related populations have occupations associated with their educational levels. Migrants who are Mexican-Americans, Blacks and Anglos have occupations related to their educational levels.[110] The educational level of post-war immigrants in Canada is significantly associated with occupational status.[111]

Polish immigrants having elementary and university education work in occupations commensurate to their educational levels while the high school educated group worked in occupations not unlike those of the elementary level group.[112]

Another way to relate education to occupation is to compare the education levels and occupations among various migrant groups. The assumption is that differences revealed by such comparisons denote the degree of economic absorption. Anglo migrants were found to have significant differences at three levels of education as compared to Mexican-American migrants. Controlling for time produced similar differences except for the group having attended high school and having been in the community for nine years or less.[113]

There is some indication that the foreign born in America are in occupations appropriate for their educational level. Although the mean educational attainment of the foreign born is lower than that of the total population, their mean occupational status is slightly higher.[114] Furthermore, if unemployment rates are any indication, the unemployment rate for the foreign born is no higher than that for native workers.[115]

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[110] Shannon and Krass, op. cit., p. 39.

[111] Richmond, op. cit., Table B.5, and A. H. Richmond, "Sociology of Migration in Industrial and Post-Industrial Societies," in Migration, ed. by J. A. Jackson (London: Cambridge University Press, 1969), Note 2, p. 268.

[112] R. Johnston, "The Occupational Distribution and the Level of Education of Polish Immigrants in Western Australia," International Immigration, Vol. 3 (1965), pp. 217-222.

[113] Shannon and Krass, op. cit., p. 42.

In summary, there are few studies dealing with present-day immigrants to the United States. Related studies on immigrants in other countries, the foreign born (a population subsuming immigrants but not equivalent), ethnic groups and migrants provide findings which can be brought to bear on the problem of this present study. These findings indicate that the educational attainment of diverse populations is associated with occupational achievement or with variables important for achievement. It is therefore reasonable to expect that the educational achievement of Spanish-speaking immigrants will be associated with their occupational achievement.

Contributions of the Present Research

The study presented in the following pages contrasts with the research reviewed in several ways. The review of the literature does not bring to light any studies of present-day immigrants, (there were studies of foreign born and refugees), after they have arrived in the United States. Studies of immigrants after their arrival have been done in other countries, e.g., Canada, England and Australia. This study has defined "immigrant" strictly and undertakes the task of reporting the characteristics of Spanish-speaking immigrants in the United States after their arrival.

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[114] Blau and Duncan, op. cit., Table 6.8.

[115] Frank L. Mott, "Manpower and Immigration," Manpower Report No. 4. (Washington, D. C.: Government Printing Office, Revised 1965, for the Manpower Administration, U.S. Department of Labor), p. 5.

This study takes as its central question the role of education in the economic absorption of immigrants in the United States. Johnston studied education and underutilization of Polish immigrants in Australia. In the study of economic absorption in general Richmond and Weiermair found education to be related to this process for immigrants and refugees, respectively, in Canada. Shannon and Krass investigated the effects of education on economic absorption of migrants, including Mexican-American migrants, in a city in the United States. No study was uncovered, however, which addresses itself specifically to the question of education and economic absorption of immigrants in the United States.

Another important contrast with other research on the economic absorption of immigrants is methodological. None of the studies which found a relationship between education and occupation for immigrants and migrants used the product-moment correlation (or regression analysis) method.[116] Although Higgs did use the regression analysis technique in his historical study, he investigated the variables of literacy, English fluency and income on aggregates but not on individuals; the ethnic group was the unit of analysis.

This present study attempts to draw from the existing theory and methods of research on the occupational status attainment processes developed with U.S. populations. The review of the literature argued that there is sufficient justification, based on the findings from related research, to expect that the role of education in the economic absorption of immigrants will be similar to the general case of occupational status attainment. This study, as in the occupational attainment research, employs the method of correlational analysis. The Duncan socioeconomic index of occupations has made this method appropriate for the study of occupational stratification. The present study, however, does not apply the method of path analysis which is a primary means for investigating the status attainment processes. This is because this study limits itself only to the role of education in the process and because this study is considered to be a preliminary step toward such an analysis by seeking evidence on the manner in which formal education functions in this process when applied to immigrants.

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[116] For a discussion on the limitations of classificatory statistical methods vis-a-vis the product-moment methods, see Hubert M. Blalock, Jr., Causal Inferences in Nonexperimental Research (Chapel Hill: University of North Carolina Press, 1964), pp. 114-119, 184.

In addition, by being based on the model of occupational status attainment, this research serves to expand the general theory by testing it in a cross-cultural context. By applying the general theory to a cross-cultural situation, the study tests certain assumptions about the nature of education. The review of related studies has garnered evidence tending to support the contention that education received in one country will influence the occupational status attainment in another. This emphasizes the cross-cultural aspects of education. Research emphasizing these cross-cultural aspects of education renders implications which are relevant to the theories of functionalism and the conflict of status groups (these implications are spelled out in the concluding chapter).

Hence, the study of education of Spanish-speaking immigrants makes several contributions. It provides information about the characteristics of present-day U.S. immigrants after their arrival in the United States. The question of the influence of education in determining economic absorption for immigrants in the United States is central to the research. This study applies the rationale and is influenced by the methodology of the current research on occupational status attainment processes as it applies to the function of education. And, finally, it enhances the general study of occupational status attainment by making use of a cross-cultural context and thus has implications for the relationship of education to society.

CHAPTER III

SAMPLING PROCEDURES

The survey population consists of male immigrants from Spanish-speaking Latin American countries residing in the District of Columbia. They have completed their formal education in their native countries and are of working age. "Immigrant" is taken to mean that they were awarded the status of "permanent resident," an indication that they are eligible to naturalize, if they desire to do so, after a specified waiting period. Furthermore, they are immigrants in the sense that they have voluntarily immigrated and did not arrive in the United States with the legal status of "refugees," as is the case for so many of the Cuban refugees of the 1960's.

From the survey population a total of eighty-two respondents were interviewed. The generalizability of the findings, naturally, depends on the procedure of selection of these eighty-two respondents. This chapter presents a description of the method of selection and data gathering. In the four sections set forth below, the preliminary considerations which are peculiar to the research problem are outlined first. These considerations are: (1) the difficulty of enumerating the survey population from which to draw the sample, and (2) counteracting the likelihood of certain possible biases given the nature of the population. The next section describes the procedure developed to cope with these difficulties and to enhance the representativeness of the sample. The third section explains the interview procedure. The final section draws some conclusions about the degree of representativeness of the sample.

Preliminary Considerations

Washington, D. C. is a city of 756,492 people, according to the 1970 population census. The survey (or target) population of the study is less than one per cent of the total population. The Spanish language population (see above, Definition of Terms) in D. C. has been estimated at from 15,000 by the Census Bureau to 50,000 by those directly involved with the Spanish-speaking community. The survey population is a subgroup of this larger Spanish language population. Thus, double identification of the perspective respondents is necessary. Taking into account these considerations, there are two problems to be faced: (1) locating the geographical areas of residence of Spanish-speaking people and enumerating the sampling frame; and (2) stratifying the sample and contending with "blank" elements and non-responses.

Boundaries of the Spanish-speaking Community and Enumeration

Conventional wisdom in the District of Columbia locates the Spanish-speaking community in the Mount Pleasant area, defined by Columbia Road on the south, 16th Street on the east, Park Road on the north, and Rock Creek Park on the west. The investigator's first intention was to take this area as the principal geographical area and randomly sample it, including all the housing units. A closer look at the area, however, muddied the picture.

The Mount Pleasant area is clearly the heart of the Spanish-speaking community. Some blocks seem to be almost totally Spanish-speaking. But even on the blocks with the heaviest concentrations of Spanish-speaking people, there are non-Spanish-speaking families. The area in general is a potpourri of people of different ethnic, racial, and national backgrounds. It cannot be characterized as uniform in any way, as can the all-black ghettoes or all-white communities.

In addition, many Spanish-speaking people spurn this area of the city and choose sections which cannot be characterized as Spanish-speaking neighborhoods. Hence there are identifiable pockets of the population scattered throughout the city as well as many individual families living in ethnic isolation.

The task of the investigator was to locate the Spanish-speaking people within the city in such a way as not to exclude some because they did not live in an area known as the "Spanish-speaking community." Since there is actually no all-inclusive "community" and there are many respondents who do not reside in any identifiable concentration, this task approaches the insurmountable within the time and resource limitations of this study. Nevertheless, a strategy was developed to avoid the necessity of enumerating all the members of the survey population and still retain representativeness in the sample.

Representativeness of the Sample, Blanks and Non-Responses

With the realization that the Mount Pleasant area is by no means the area of residence of all Spanish-speaking people, it is conceivable that those not living in the Mount Pleasant area could have different characteristics from those who do. By extension, Spanish-speaking people living in areas of differing Spanish-speaking density and areas of differing socioeconomic status could have differences in the characteristics being measured. To avoid this bias in representation a means of stratifying the sample was developed that attempted to include members of the survey population from different strata and residing in different levels of Spanish-speaking concentrations (see the following section).

Another possible source of bias lies in the additional problem of separating members of the survey population from the more general Spanish language population. It is estimated that the survey population is anywhere from 7 per cent to 25 per cent of the Spanish language population.[1] Locating a Spanish-speaking person would not automatically mean that a member of the survey population had been located. Therefore, it is very evident that the sampling frame will be riddled with listings of persons who are not a part of the survey population. These listings of addresses in the sampling frame which do not contain qualified respondents are considered to be "foreign" elements or blanks.[2]

In this type of study, given the current climate of the immigration situation in which illegal aliens abound, a high incidence of non-response is also a likely possibility. Whereas the problem of blanks is annoying, the harm of non-responses as a bias gives cause for concern. This concern is alleviated somewhat by the real likelihood that not all non-responses are actually part of the sample since the rate of blank listings will be high (see page 61).

The Sampling Procedure

In order to deal with the problems described above, a procedure was carried out that made use of the available statistical data and various directories. This procedure also included the services of enumerators who worked in many of the selected census tracts and of interviewers who sometimes doubled as enumerators. The strategies worked out actually did not solve the problems in the sensethat their effects can now be ignored. The procedure attempted to cope with the problems and to minimize their effects. This procedure is briefly described in the following paragraphs and then presented in detail in the following sections.

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[1] See p. 48 for estimates of the Spanish language population and p. 52 for estimates of the survey population.

[2] In the terminology of Leslie Kish, Survey Sampling (New York: John Wiley & Sons, Inc., 1965), p. 57.

Since the original intention of sampling exclusively the Mount Pleasant area was discarded, an alternative plan was devised. Other areas of the city with Spanish-speaking population were outlined by a long-time activist in the Spanish-speaking community and by census data. The census tract was selected as the geographical segment and the activist's information was used to support the findings of the Census Bureau in locating the presence of the Spanish language alien population.

From the census data, it was determined that 91 census tracts of the total 98 census tracts in the District of Columbia surveyed in the 1970 census contained persons who belonged to a housing unit in which Spanish was spoken. It was further discovered that there were thirty-six census tracts which contained Spanish language aliens aged eighteen or more. The number of adult aliens in these tracts sums to 4,645. This number includes males and females and Spanish-speaking aliens who are not immigrants (not members of the survey population), i.e., students, diplomats, temporary workers, holders of international visas, employees of diplomats, etc. It is apparent that there was no way to arrive at the exact number of the survey population in each census tract but an estimation is offered below.

The thirty-six census tracts were cross-classified by density (percentage of Spanish language population to total population) and the mean rent of the census tract (an indication of income). Certain census tracts were selected (see below) and samples were drawn from these tracts at random. The use of the census tract to construct the strata allows for stratification of the sample without having to enumerate the entire survey population. This method circumvents the prospect of bias caused by limiting the enumeration to the geographical areas with the heaviest concentrations of the Spanish language population.

In brief, the sampling procedure consists of a two-stage design. The first stage is the systematic selection of census tracts believed to represent different levels of income (as determined by mean monthly rent) and different levels of density. The second stage entails the random selection of respondents from each of the census tracts. This stage conforms with the usual practice of enumerating all the possible members of the survey population and randomly selecting a certain number. The number in the random selection is set in accordance with the proportion of the survey population likely to be found (based on the census data) in the stratum which the tract represents.

Survey Population Size

The appropriate size of the survey population can be estimated from two sources. By law, aliens are required to report their addresses to the Immigration and Naturalization Service every January. These address reports are tallied according to nationality and state of residence (including the District of Columbia). The Immigration and Naturalization Service also categorizes the aliens by "permanent resident" status and "other" status. There is no further breakdown such as by age or sex. In 1972 a total of 17,100 aliens from all countries were reported in the District of Columbia, of which 12,463 were permanent residents.[3] From Spanish-speaking

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[3] 1972 Address Report Cards (Form I-53) Received, by State of Residence, Nationality and Status: District of Columbia. Immigration and Naturalization Service, National Office in the District of Columbia, Xerox copy.

Latin American countries, a total of 2,861 were reported as permanent residents, which is 75 per cent of the total number of aliens reporting from these countries. The survey population for this study is equivalent to the portion of permanent resident population which is male and has been educated in the Latin American countries.

The estimate of the survey population in the District of Columbia was made by computing the proportion of all male immigrants with twenty years of age or more from each Spanish American country. This information was gathered from the 1971 Immigration and Naturalization Report.[4] This proportion, which was calculated for the number of permanent residents entering the U.S. in 1971 (the proportion of Mexican immigrants was weighted according to its proportion in the District rather than nationwide), yielded an estimate of 761 male immigrants likely to be members of the survey population. This total can be considered the lowest point on the range of possible estimates since it neglects working youths between sixteen and twenty who are family heads (although this error is probably very slight) and more importantly does not estimate the number of aliens who neglected to report their address.

Another method used to arrive at an estimate of the survey population utilized Census Bureau data.[5] This data reported a total of 4,645 aliens of eighteen years or more residing in the District in 1970. If the proportion of permanent residents to total aliens derived from the Alien Report is reliable, there were 3,484 permanent residents (75 per cent of 4,645). Using .45 as the ratio of males to total population aged eighteen years or more,[6] it is estimated that there are 1,568 male immigrants eighteen years or over in the District of Columbia. This is not to be considered conclusive because the Census Bureau Fourth Count Survey of the Spanish language population used a five per cent sample to obtain its alien totals. Thus, each sample unit was magnified twenty times, easily overstating or underestimating the actual total. On the basis of these two estimates, the survey population is anywhere from 761 to 1568.

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[4] This proportion is 26.6 per cent, calculated from Table 9. To get an idea of its accuracy, a proportion was derived from males 20 years and over in the Spanish language foreign born population in the District. This proportion is 28.0 per cent, calculated from Table 179 of the Census Bureau's Census of Population, 1970, Detailed Characteristics, District of Columbia.

[5] From a Census Bureau computer tape of the Fourth Count (Spanish Language Population) provided by the Center for Urban Ethnic Affairs.

Stratification of the Sample

The Fourth Count Survey of the Spanish language population was made available to the investigator in the form of a computer print-out by the Center for Urban Ethnic Affairs. Only five items were printed but they did include a breakdown of each census tract in the District by citizenship and age. Thus thirty-six tracts were identified as having Spanish language aliens. For these tracts, the number of Spanish language population eighteen years and over and the number of aliens within that population were calculated. Again, it should be emphasized that the "alien" population includes immigrants but yet it is not equivalent to the survey population.

The census tracts to be sampled were not selected at random; they were chosen in a purposeful way. Two criteria influenced this choice: First, the absolute number of Spanish-speaking aliens eighteen and over as reported by the Census Bureau, and second, the census tract's representativeness of a certain stratum of the census tracts with respect to the density of Spanish language population in the total population and the average rent for the tract. The first criterion was imposed as a matter of efficiency; if several census tracts were equal on the second criterion, then the one with the highest absolute number of aliens was selected. This was done wherever possible so that of the elever (and part of a twelfth) census tracts surveyed, only one (and the partial tract) had less than fifty male aliens as estimated from the census data.

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[6] Calculated from Table 9, Immigration and Naturalization Service's Annual Report, 1971.

The second criterion was imposed in an attempt to stratify the sample by the characteristics of income (as indicated by average census tract rent)[7] and by density. The density stratification was difficult to achieve and the sample falls short of expectations in this area because tracts with less density also have low numbers of aliens, making these individuals hard to locate. Also, the time lag between the Census Bureau's survey and this survey created some problems due to the geographic mobility of the population. "Density" is determined by finding the percentage of Spanish language population in the total population of each tract.[8]

The thirty-six census tracts having Spanish language aliens were grouped by the stratification criteria of density and average rent. This was accomplished by ordering the tracts from the lowest to the highest tract on rent and density. Then the list was divided into three groups or strata: high, medium and low. Table 3.1 presents the resulting ranges of density and rent. The twelve lowest tracts in density range from one per cent to three per cent, the twelve medium tracts range from four to six per cent, and the top twelve range from six to eleven per cent. The second column shows the range of percentages of alien population in each level. Of the thirty-six tracts, the lowest tract by density has only 0.4 per cent of the Spanish-speaking aliens while the densest tract has 16.6 per cent. The last column indicates the mean monthly rent for each of the three levels.

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[7] Table 2 in U.S. Bureau of the Census, Census of Housing: 1970, Black Statistics, Washington, D. C.-Md.-Va. Urbanized Area (Final Report HC(3)-44).

[8] The total population in each tract is found in Ibid.

The next step in the procedure was to decide upon a sample size that was obtainable within the time limitations and which would allow for a viable statistical analysis. One hundred was selected as the target sample size since it seemed to meet these two conditions. This number represents from six per cent to 13 per cent of the estimates of the survey population. The actual number obtained is 82 cases representing from five to ten per cent of the target population estimates.

Having established a desired sample size, it was necessary to determine how many cases should be drawn from the tracts in each of the three levels of density and rent. The three strata of density and of rent were cross-classified resulting in nine new strata of the original thirty-six census tracts reporting Spanish language aliens. Table 3.2 presents the number of census tracts in each of the nine new strata. Columns four and five of Table 3.2 display the percentages of Spanish language population and Spanish language alien population in each of the nine new strata. In the case of the Spanish language population this percentage represents the proportion in each stratum to the total in the thirty-six tracts and not the total District Spanish language population. For the Spanish language alien population, since all the tracts in the District having Spanish language aliens are

TABLE 3.1

RANGES IN CATEGORIES USED TO CLASSIFY THIRTY-SIX CENSUS TRACTS WITH SPANISH LANGUAGE ALIENS BY DENSITY AND BY RENT

By Density[a]	Ranges of Density[a] within Tract Groupings (in Percentages)	Ranges of Percentages of Aliens in Tract Groupings	Mean Rent	Ranges of Mean Monthly Rent within Tract Groupings
High[b]	6 to 11	2.5 to 16.6	High	$167 to 221
Medium	4 to 6	1.2 to 2.3	Medium	121 to 160
Low	1 to 3	.4 to 1.1	Low	85 to 121

[a] Density is defined as the per cent of Spanish language speakers to the total District of Columbia population. For example, in the low grouping, the tract with the lowest density has one per cent while the highest has three per cent of the total in the District of Columbia.

[b] High, medium and low categories are obtained by ordering the tracts with alien population by the density of each tract. "High" refers to the top third of the tracts, medium to the middle third, and low to the lowest third. Since there are thirty-six tracts with alien population, each grouping has twelve tracts. Rent was also used to order the tracts.

TABLE 3.2

SAMPLE DATA COMPARED TO CENSUS BUREAU DATA[a] IN ALL CENSUS TRACTS IN THE DISTRICT OF COLUMBIA REPORTING SPANISH-SPEAKING ALIENS

DENSITY[b] (1)	RENT[c] (2)	NUMBER OF CENSUS TRACTS (3)	PERCENT SPANISH SPEAKERS[d] (4)	PERCENT ALIENS[d] (5)	NUMBER OF TRACTS SAMPLED (6)	PERCENT OF SAMPLE (7)
High[e]	High	4	16.7	14.7	1	15.9
High	Medium	7	29.0	28.2	2	34.1
High	Low	1	4.3	3.4	1	13.4
Medium	High	6	19.1	11.1	1	3.7
Medium	Medium	2	3.8	2.3	1	2.4
Medium	Low	4	12.1	21.5	2	29.3
Low	High	2	2.6	5.6	1	1.2
Low	Medium	3	2.8	4.0	1	0.0
Low	Low	7	9.4	8.6	1	0.0
Total		36	99.8%	99.4%	11	100.0%

[a] Calculated from: Center for Urban Ethnic Affairs, "Selected Items for Spanish Population," Analysis of Fourth Count 1970 Census Data (District of Columbia, Census Bureau data tape print out).

[b] Density refers to the proportion of Spanish language speakers to the total population in a census tract.

[c] Rent refers to the mean rent for each census tract.

[d] Males, 18 years and over.

[e] See text for explanation of these categories.

included, the total for the thirty-six tracts is the same as for the total in the entire District.

The percentages in columns 4 and 5 indicate the proportion of the target population likely to be found in each of the nine stratification categories. There are good reasons for using either the Spanish language percentages or the alien percentages as the basis for stratifying the sample. This is not obvious in the first analysis because the survey population forms a larger part of the alien population than the entire Spanish language population. However, the alien population also includes diplomats and international visa holders working in international organizations. This group of elites very likely lives in areas which differ significantly in average rent and density from the residential areas of immigrants. To countervail this possibility, it was decided to use the midpoint between the two columns whenever they differ. They only differ by more than two percentage points in two of the tract groupings and by using the midpoint even these two groupings are still within four percentage points of either population proportion. This slight adjustment probably does not affect the results to a significant extent in contrast to alternate approaches.

Once the number of projected cases for each of the nine strata had been determined, it was possible to select the tracts to be sampled. For two of the strata, this number was large enough to warrant the selection of two tracts. Column 6 of Table 3.2 presents the number of tracts in each strata selected for sampling. This can be compared to the total number of tracts in each grouping provided in column 3. The tracts with the largest absolute number of aliens were then chosen as the tracts to be sampled. Table 3.3 contains the census tract number of the tracts selected (in column 3) and the projected number of interviews required to reach a total of one hundred (in column 6). The figures in column 6 were derived by the procedure just described as taking

TABLE 3.3

NUMBER OF LISTINGS, INTERVIEWS OBTAINED, INTERVIEWS PROJECTED, REFUSALS, AND NON-RESPONSE FOR EACH CENSUS TRACT SURVEYED IN NUMBER OF CASES

Density (1)	Rent (2)	Census Tract (3)	Number of Listings[a] (4)	Interviews Obtained (5)	Interviews Projected[b] (6)	Refusals (7)	Non-Response[c] (8)	Blanks[d] (9)
High	High	5.0	156	13	16	19	31	93
High	Medium	39.0	133	25	25	18	12	78
High	Medium	55.0	57	3	4	3	5	46
High	Low	38.0	38	11	4	4	5	18
Medium	High	7.0	215	3	15	2	25	185
Medium	Medium	42.2	43	2	3	1	7	33
Medium	Low	27.2	95	18	12	16	21	40
Medium	Low	28.0	100	6	5	7	11	76
Low	High	9.0	59	1	4	2	16	40
Low	Medium	93.3	0	0	3	0	0	0
Low	Low	95.2	0	0	9	0	0	0
Low	Low	73.7	0	0		0	0	0
Total			896	82	100	72	133	609
Per cent			100%	9.2%		8.0%	14.8%	68.0%

[a] "Number of listings" refers to the number of addresses (listings) randomly selected at which potential respondents may reside.

[b] The number of interviews anticipated in each census tract estimated from Census Bureau data.

[c] No contact was made with an occupant at the designated address.

[d] Sampling elements which are not valid members of the study's population.

the midpoint between the percentage of Spanish language and alien population in each of the groupings. In the two groupings having two tracts, this number was then further divided in such a way that each tract was assigned a number of projected interviews in accordance with the proportion of aliens in that tract.

Having arrived at a number of respondents for each census tract still leaves the question of the number of listings[9] for each census tract pending. The number of listings for each tract is a function of not simply the number of desired respondents but also of the number of blanks, non-responses and refusals anticipated in that tract. Naturally, the number of listings for the tract would have to be considerably larger than the number of respondents desired. At the beginning of the data gathering process, the investigator would estimate the number of listings to be randomly drawn. He would arbitrarily double or triple the number of respondents actually desired with the hope that the acceptable respondents would comprise a half or one third of the number while the rest would be blanks, non-response, and refusals. If more respondents were needed, another drawing would be made. The number drawn in the second section would be based on the proportion of acceptable respondents of the total number of listings in the first drawing. This second drawing was usually more accurate than the first. Column 4 of Table 3.3 shows the number of listings for each tract and column 9 indicates the number of blanks. As the table indicates, blanks accounted for 68 per cent of the total number of listings drawn for all tracts combined.

It was believed that these estimates would later become more accurate. This was not always the case, however. In some tracts, the canvassing (discussed below) had been more effective (probably due to a lower number of apartment houses), leaving the number of non-Spanish-speaking blanks much lower. In some cases, the number of Spanish-speaking blanks were proportionately much greater, resulting in many Spanish-speaking blanks (diplomats, students, citizens, etc.). Thus, in almost every tract more than one drawing was required.

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[9] "Listing" refers to the address of a potential respondent. In this study, "number of listings" is used instead of sample size to differentiate between the "invited" sample and the resulting sample of acceptable sampling elements.

This procedure led to several complications. Once a number of listings had been randomly drawn for a tract, every listing had to be investigated even if the number of respondents exceeded the desired number for that tract. It also meant that if some tracts did not produce near the desired number of respondents, the stratification design would be set askew. Both of these circumstances occurred in this study and the effects that they have on the findings are discussed below in the section on representativeness.

The Sampling Frame[10]

The sampling frame was determined on a census tract basis. All addresses which could possibly have Spanish surname occupants in a target census tract were listed and a number of housing units were selected using a table of random numbers. Which census tracts were selected and how this number was arrived at was taken up above in the discussion on stratification. The sampling frame of addresses (or listings) was developed from the telephone company's address directory and the city directory in the following way: (1) once a census tract had been selected, the streets included in the census tract were identified. This was done by using the

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[10] The "sampling frame" is the complete list of addresses of all the members of the survey population. The sample is "drawn" from the sampling frame.

Directory of Street Addresses by Census Tract (published in September, 1970), by the District of Columbia Government). (2) The next step involved listing (actually Xeroxing) each residential address on the blocks specified in the Directory of Street Addresses. These addresses were taken from the 1970 City Directory of the District of Columbia (published by the Polk Company). (3) The third step undertaken was to eliminate addresses from the list with non-Spanish surnames (except for apartment houses) as found in the telephone company's address telephone book, which is distributed anew every six months.

The resulting sampling frame ultimately contained addresses of persons with Spanish surnames, persons with unlisted telephone numbers and those in identifiable rooming houses and apartment houses (left on the list because their rate of turn-over could easily lead to the omission of valid respondents). It is obvious that this type of listing would yield a sampling frame with a high proportion of blanks. Consequently, the sample drawn from the frame will also be filled with blanks, an unavoidable occurrence when one is working with rare sampling elements. A high proportion of blanks is merely an inconvenience, however, and does not produce a bias if one is careful not to substitute for the blank elements. Furthermore, the frame construction procedure used here has the advantage of increasing the likelihood of including all valid sampling elements, i.e., acceptable respondents, despite the disadvantage of containing a lot of blank elements.

Canvassing

It was found that working with samples which contain a proportion of blanks so much higher than that of valid elements consumes a lot of time at the interviewing stage. Much time at the beginning was spent simply identifying whether or not sampling elements were Spanish-speaking. Several part-time enumerators who were not qualified to interview were hired and at times the interviewers also functioned as enumerators to help pare down the original sampling frame.

The principal objectives of the canvassing were to eliminate non-Spanish speakers from the sampling frame and to inspect the mail boxes or listings at apartment and rooming houses for Spanish-surnames. The canvasser's main job then was to find out which addresses on the list were occupied by Spanish-speakers and to survey the apartment and rooming houses to determine in which housing units persons of Spanish-surname resided. He was not to investigate the Spanish-surname listings already identified through the other sources. This was to avoid giving the survey any connotation of an illegal alien investigation, which is fairly frequent in some areas, and to avoid as much as possible making a double imposition on the respondents. The canvass, therefore, was similar to the address-telephone directory search in that it was primarily to eliminate blanks (non-Spanish-surnames in this case); the canvasser in practice not only knocked on doors but also checked names on mail boxes, especially in the apartment houses. The resulting sampling frame for some tracts, although non-response addresses still were kept on, was trimmed down considerably and hence listed a majority of Spanish-surname residents.

The canvassing procedure was not carried out in all the census tracts sampled. It was not carried out in the first census tract because its need was not recognized at that time, and with one exception it was not done in the census tracts from which only a few respondents were required. The canvassing was done in six census tracts. It was done in one census tract in the Southwest section of Washington from which only a few respondents were required but which had a large number of apartment houses (this canvas included verification of possible respondents). As was to be the case in another census tract and in part of another one, no valid sampling elements were located in this canvas. Not finding the expected respondents shakes one's faith somewhat in the reliability of the Census Bureau's data at least for census tracts reporting a low proportion of aliens (although it must be remembered that this data was collected in 1970 and the survey was carried out in the summer of 1972, leaving time for many changes in a highly mobile population.)

Sample Randomization

After the sampling frame of a census tract had been constructed, an estimate (described above) was made as to the number of blanks expected in the tract. In six tracts an attempt was made to decrease the number of blanks by canvassing. The final sampling frame for these tracts were the resulting lists after canvassing had been done. These lists were numbered and a random number table was used to select the addressees to be interviewed.

The Interview Encounter

The data gathering procedure was that of an interview survey. Pilot studies and a copy of the interview schedule are found in Appendices A and B. The typical interview setting is described below.

Making Contact

Three interviewers were used for the survey, although the principal investigator conducted 70 of the 82 interviews. All the interviewers were bilingual and able to carry out the interview in Spanish although their native language was English. Since housing units were used to identify potential respondents, the interviews were held in the respondent's house or in front of the house except in two cases. (To account for the two exceptions: After telephoning the respondent, by prearrangement the interview was held at a laundromat; in the other case, the interview was secured over the telephone at the respondent's insistence). All eligible respondents at an address were interviewed.

The interviewer usually attempted to make contact by going to the respondent's address. Usually the interviewer could identify the person who answered the door as a Spanish-speaker and he would explain his presence in Spanish. In other cases the study would be explained in English. If no eligible respondent was located, the interviewer used the opportunity of the response to verify the presence of Spanish-speakers on the block or the schedule of someone believed to be an eligible respondent. Of course, tact and discretion were used in such inquiries. In any case, the interviewer was very careful to explain the purpose of the study and to gain support or at least the understanding of anyone with whom he happened to come into contact. This was essential since the interviewer returned to some blocks many times over the course of the interviewing period (about two and a half months) and was recognized by the residents.

When there was no response at the address after three or four attempts and neighbors were not helpful in providing information, there was another possibility. For many of the addresses a telephone listing was available (using the telephone company's address-telephone book). The interviewer would then try to make contact by telephone. In locked apartment houses contact by telephone was usually the only way to approach the respondent. When there was no response and no telephone listing was available, the address was classified as a "non-response" address. If there was any indication (e.g., from neighbors or a Spanish first name on a listing) that a valid subject resided at the address, the interviewer would persist as long as he interviewed in the area.

If at all possible, the interviewer attempted to hold the interview upon making the first contact. Many times wives would indicate an appropriate time and sometimes provide the telephone number so that appointments could be made. Often it was difficult to identify a refusal since in some cases the respondent or his wife would indicate an appropriate time and upon arriving at the appointment the interviewer would not find the respondent at home.

Having made contact, the first task of the interviewer was to explain the study. This was especially vital when asking for the interview. If the interviewer had even the remotest belief that the respondent was a valid subject, he would state the purpose of the study quite frankly and ask for the respondent's cooperation. Later in the interview, he would identify whether or not the subject met the criteria of the target population: male, holder of a permanent resident visa, from a Spanish-speaking Latin American country and formally educated in the native country. The reason for not distinguishing valid from invalid respondents upon making first contact was to avoid any semblance of a search for illegal aliens.

Securing the Data in the Interview

Once the respondent agreed to hold the interview, the interviewer was usually invited into the residence. The interview procedure was an adaptation of the one Pomeroy[11] describes in his book about the Kinsey report and also suggestions from Parten.[12] The respondent was assured of the confidentiality of his responses and that his answers would contribute to a scientific study that could possibly benefit his community (trouble was taken not to overstate this last point in order to avoid raising any false expectations).[13] The purpose of the study was restated at this time in some cases.

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[11] Wardell B. Pomeroy, Dr. Kinsey and the Institute for Sex Research (New York: Harper and Row Publishers, 1972), pp. 101-118.

[12] Mildred Parten, Surveys, Polls, and Samples: Practical Procedures (New York: Cooper Square Publishers, Inc., 1966), pp. 345-360.

The respondent was given an opportunity to ask questions about the study before beginning, as Pomeroy suggests.[14] The first question centered around country of origin and length of time in the United States since they seemed to flow naturally from the conversation. As the information was provided, the interviewer would write on the interview schedule (see facsimile in Appendix). The interviewer would reveal information about himself at the beginning, explaining how he had learned Spanish and the Latin American countries he had visited. The interviewer also established rapport by letting the respondent digress and following up on truly interesting aspects of his situation or personality. Since the immigrants' stories are often very interesting and the obstacles they have overcome often admirable, there was no problem in appearing to be a genuinely attentive listener. Recording could be done rapidly on the interview schedule since only a few words were sufficient to capture the information. These aspects of the interview were designed to establish rapport and cast the interview into conversation-like form.[15]

The interviews lasted from one half hour to one hour.

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[13] Parten suggests stepping back from the door after ringing the door bell so that the occupants can see the interviewer through the window and also to avoid appearing too aggressive (p. 348). The interviewer was dressed neatly but casually in sport clothes of the typical student in order to look like a student and avoid a salesman's or bill collector's image.

[14] Pomeroy, op. cit., p. 115.

[15] Parten points out that the interviewer's "selling" of himself is often more important than "selling the purpose" and memorizing questions helps "to simulate a conversational manner." (p. 360).

In concluding the interview, the respondent was again thanked and assured of the confidentiality of his information. In several cases the interviewer was questioned himself by the respondent, usually in reference to a community service. In addition, the interviewer readily sought to recommend community services in response to a specific problem that came out in the interview.

In general the respondents replied readily to questions. They appeared sincere in their participation in the interview. Many actually enjoyed talking to a North American about their experiences. The accuracy of the responses to the questions are commented upon in Chapter Four where the results for each characteristic are presented.

Representativeness of the Sample to the Population

Because of the random selection within tracts (see above), it is felt that those tracts selected are fairly accurately described by the data for the tract, although the data was not analyzed by tract. The respondents of the different tracts were pooled into one group and their data was considered to be representative of the tracts as a geographic unit and, by extension, to similar demographic areas.

The stratification design was a further attempt to increase the probability that the pooled data of the sample represented the survey population. In tracts where the number of interviews obtained differs greatly from the number projected from census data, it can only be assumed that this difference reflects either the lack of accuracy in the procedure for determining the number of expected interviews, which is likely since this was based on comparable but not equivalent data, or a weakness in the sampling method. In five tracts the number of interviews matches the desired number within a spread of two interviews (see

Table 3.3). In two tracts the number of interviews greatly exceeds the number expected according to census data. In four tracts the number of expected interviews greatly exceeds the number obtained. Other factors which could possibly bias the results are the non-responses and refusals. These factors are discussed in the following sections.

Non-Responses

Table 3.3 above displays the sample size, the number of interviews obtained, number of interviews desired, refusals, and non-responses. Refusals represent those who explicitly declined to be interviewed and others who made themselves inaccessible in one way or another to the interviewer although they never openly declined the interview. Non-response indicates the number of sampling units who were never contacted. Although the interviewers were persistent and called at the non-response addresses at different times of the day, sometimes they were unable to make contact. When telephone numbers were available, non-response addresses were called. At first glance the number of non-response seems to be high. But if these numbers are adjusted to take into account the fact that the sample was riddled with blanks, the numbers decrease considerably. If it is assumed that the proportion of blanks for the non-response is the same as it is for the total number of listings, the percentage of non-response drops from 14.8 to 4.7.

The effects of the non-response on the findings is difficult to assess. It is the investigator's impression, in the majority of cases, that non-responses occurred in apartment houses with tight security. The type of cooperation from apartment managers varied considerably. In some cases, the investigator was allowed to look through the register but not allowed to enter the building beyond the desk. Other times he was allowed to call the subject by house phone. In some cases, the desk clerk would go through the register and pick out the names of potential Spanish-speakers. The latter is considered less desirable. Some apartment buildings had no desk clerk and the doors were always locked. Usually through patience and perseverance the interviewer was able to enter at some time during the day, often on Sunday mornings. This prohibited the interviewer from varying the time and also usually squelched attempts to contact the subject during the evening hours which proved to be the most profitable interviewing time period. The problem of the apartment houses was especially acute in the luxury or near-luxury type buildings. The conclusion then is that the effect of this bias would tend to be in favor of the lower income housing areas and against the higher income areas.

Refusals

More can be said about those prospective respondents who either explicitly refused or indirectly refused by avoiding the interviewer after initial contact was made with someone at the address. The tabulation on refusals was made by keeping these two categories separate, making it clear how many refused explicitly and how many seemed to do so indirectly. From those who refused indirectly, it is believed that a minority were potential respondents who would have cooperated if the time of the interviewer's contact had been different or if some truly pressing matter were not interfering. For others, it is difficult to determine if those who refused outright were illegal aliens or if they simply were very suspicious. In two cases of refusals, the interviewer did find out that the potential subject had a drinking problem. Although this would not have bothered the interviewer, in one case the subject was found in such a state that no interview was possible and it was learned that it is a rare occasion when the subject could be found coherent.

The reason that some subjects refused indirectly was that they were returning to their country or (as their wives reported) were in their country at the time. Sometimes it was for a vacation and one or two were leaving permanently. In two cases the wives reported that their husbands had returned to their country for a short time.

In several cases, the interviewer learned by talking to spouses or members of the community that the subject was a valid respondent and probably would have been willing to participate in the study. In two such instances, the interviews were lost because the subject held more than one job and was only home at times which were not convenient to the subject for the interview, such as very late at night or on Sunday mornings. In two cases, the subjects were cordial but because of some idiosyncrasy did not want to participate, even after they had revealed a lot of information of the kind desired by the interviewer.

Obviously, in all cases, it could be that the subject was illegal or in other ways not an appropriate respondent. One can understand the desire of the illegal alien to dissimulate and attempt to give the impression that other pending circumstances intervene between the interviewer and the respondent. Clearly, in some cases, this is what has happened. Nevertheless, it is also likely that legitimate immigrants, and thereby valid sampling elements, did refuse to be interviewed on other grounds.

There are several likely reasons for refusals by respondents. Most obvious are limits on time and the imposition on the respondent. Immigrants fearful of unexpected inquiries could be reacting in accordance with habits or precautions developed in the home country or projecting inner fears caused by illicit activity in the United States; or perhaps they are simply suspicious by nature. Immigrants holding two or more jobs or doing odd jobs when the opportunity arises would simply prize their time and would not want to be accosted by a stranger. The fragile borderline between a refusal and an interview is illustrated most clearly in a few cases which yielded interviews after a month of pursuit. This probably would have happened in other cases but the time period for the interviewing stage of the study had come to an end.

In sum, there were 8.0 per cent refusals of the total sample, with 2.7 per cent of the total being outright refusals and 5.3 per cent being broken appointments which were taken to be indirect refusals. The effects of refusals on the study can be better assessed than the effects of non-response since relatives and neighbors of the subjects were often contacted. It is probable that a slight bias against those who are the hardest working has occurred. Also those with severe drinking problems are probably under-represented. Similarly, those with some pressing problem in their country or at least with fairly close ties to their country are probably under-represented. If the flat refusals are distinguished from the indirect refusals and if these are considered to be illegal aliens, the refusal rate for the entire sample drops from 8.0 per cent to 5.3 per cent (or 47 sampling elements).

Conclusion Related to Representativeness

From the foregoing discussion it would appear that the following groups were under-represented by the sample data: those living in luxury-type apartments, those with severe personal problems (manifested by drinking), those who are visiting or about to return to their country, and those who are so involved in their work that they have little time for anything else. Their opposites, therefore, will be proportionately over-represented.

Another way to assess degree of representativeness is to compare the number of interviews comprising the sample with the proportion of Spanish-speakers expected in each census tract. This is done in Table 3.4. It can be seen that those in low density tracts are under-represented and

TABLE 3.4
COMPARISON OF SAMPLE AND CENSUS DATA IN THREE CATEGORIES OF DENSITY AND RENT

Density[a]	Percent of Spanish Speakers[b]	Percent of Total Aliens	Percent of Total Sample[c]
High	50.0	46.3	63.4
Medium	35.0	34.9	35.4
Low	14.8	18.2	1.2
Total	99.8%	99.4%	99.0%
Rent[a]			
High	38.4	31.4	20.8
Medium	35.6	34.5	36.5
Low	25.8	33.5	42.7
Total	99.8%	99.4%	99.0%

[a] See Table 3.1

[b] Based on number of Spanish language speakers (adult males) in the thirty-six tracts having aliens.

[c] Based on results of survey of immigrants in eleven tracts. Immigrants and aliens are not synonymous; aliens include immigrants.

that those in high rent tracts are under-represented. Looking directly at those census tracts from which the bulk of the sample was extracted, it can be observed that the original intention of producing a sample unbiased in terms of only representing what is known as the "Spanish-speaking community" was thwarted. Ninety-one per cent of the obtained interviews come from tracts in the "Spanish-speaking community" or tangential ones. The sample data over-represents, then, high and medium density tracts, and it is biased against immigrants in high rent tracts and in favor of those in medium and low rent tracts.

CHAPTER IV

CERTAIN CHARACTERISTICS OF MALE SPANISH-SPEAKING IMMIGRANT WORKERS IN THE DISTRICT OF COLUMBIA

In the literature reviewed it was determined there was virtually no research or writings dealing specifically with this group of immigrants. Studies of Mexican immigrants, the native Spanish American population, Cubans and Puerto Ricans have been carried out. There are also studies of "Brain Drain" immigration which include highly educated Latin Americans and Latin American students. But there appears to be no research or even a description of the Spanish-speaking immigrants encompassing all levels of education not simply the highly educated, and excluding refugees and citizens.

A major objective of this study and the aim of this chapter is to present a statistical description of certain characteristics of this group of immigrants. These statistics will be compared whenever possible to other populations in the District of Columbia. Further, since the education of the immigrants is of primary concern in this study, the characteristics often will be analyzed in relationship to educational attainment. In the following section the results of the data analysis are presented. In the second section these results will be discussed.

Findings

Each characteristic for which there are findings will be examined individually but at the outset an over-all view of the statistics will provide a profile of the sample. In Table 4.1, it can be observed that there were at least 76 cases for which there is data for each variable and a total of 82 cases at the most. Missing data accounts for the

TABLE 4.1

MEAN, STANDARD DEVIATION AND MEDIAN FOR EIGHTEEN VARIABLES, FROM SAMPLE DATA

Variable	# of Cases[a]	Mean	Standard Deviation	Median	Range Low	Range High
Educational attainment[b]	82	8.6	4.3	8.5	0	18
Occupational status[c]						
Father's occupation	80	33.4	22.8	23.1	6	84
First home occupation	81	28.6	19.9	23.0	5	92
Last home occupation	81	38.6	20.2	35.8	7	93
First U.S. occupation	82	17.0	15.1	11.1	5	92
Present U.S. occupation	82	23.4	16.6	18.7	6	92
Salary-weekly (1970 dollars)						
Last home salary	76	89	151	46	9	981
First U.S. salary	78	92	32	86	46	256
Present salary	76	140	75	126	53	660
Unemployment in months[d]						
Home country	80	2.56	2.75	1.2	1	9
U.S.	81	2.0	1.6	1.3	1	9
Order of birth among males	81	2.1	1.4	1.8	1	7
Age	82	37.0	11.4	34.0	19	74
Years working	81	20.8	12.1	17.3	4	57
Time in the U.S.	82	5.2	4.1	3.9	1	26
Community integration index[e]	82	1.8	0.7	1.8	1	3
English proficiency[f]	82	2.3	1.1	1.8	1	4
Number of dependents	76	3.3	1.7	2.5	0	8

[a] The total sample is 82 subjects. Departures from this base N are due to missing data.

[b] Highest grade completed.

[c] Measured on Duncan's Scale; see text, p.85.

[d] Longest duration of unemployment in each country.

[e] A three point index based on organization membership and identification of community leaders; see text, p.113.

[f] See text for measurement procedure, p. 108.

variations in the sample size.[1] In comparing the means with the medians, it can be noted that in seventeen variables (all except community integration) the mean is larger than the median. This indicates a positive skewing in practically all of the variable distributions. The distance between the median and the upper limit of the range provides an idea of the degree of skewing. The measures of economic success, occupational status and especially income, seem to have the most skewed distributions judging by the differences between the mean, median, and upper limit of the range.

The significance of the relationshps among the variables, which are assumed to be measured on an interval or dichotomous scale, were determined by the product-moment correlational technique. Table 4.2 is a correlation matrix for seventeen of the twenty-one possible variables intercorrelated. Of the four variables omitted, home country unemployment and order of birth have no significant correlation coefficients. Number of dependents is significantly correlated only with age ($r = .22$, $P < .05$). Present hourly earnings correlate almost perfectly with weekly salary ($r = .97$) and correlates with other variables to the same degree as does weekly salary. It is believed that its analysis contributes nothing to the study and therefore was omitted.[2]

The sample size for the correlational matrix is eighty-one. Except for one of the eighty-two cases, it was possible

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[1] There are several reasons why there is missing data for some respondents: inability of the respondent to remember, interruption of the interview, and omission of a question by the interviewer. Weekly salaries have missing data because some respondents gave hourly salaries. These were later converted to weekly salaries by assuming a forty-hour work week, which is one of the procedures used to estimate missing data (see below in the text where this is mentioned).

[2] Last home salary had been included in the running of the correlational matrix. Later these salaries were found to be erroneously calculated and were calculated anew using the correct procedure. This variable, in its new form, therefore, is reduced to a mean, median and standard deviation but has not been correlated with the other variables.

TABLE 4.2
CORRELATIONAL MATRIX FOR SEVENTEEN VARIABLES

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.Ti	1.00																
2.Age	.56	1.00															
3.Dad	.16	.49	1.00														
4.Ed	.20	-.16	.46	1.00													
5.HNE	-.03	-.03	-.02	.21	1.00												
6.UNE	-.01	-.32	.14	.30	.31	1.00											
7.FHO	.23	.31	.39	.62	.11	.13	1.00										
8.LHO	.18	.11	.41	.55	.19	.20	.69	1.00									
9.FUO	.36	.24	.07	.35	.17	.08	.48	.44	1.00								
10.FUS	.04	.17	.01	.11	.16	-.05	.13	-.01	.31	1.00							
11.PUO	.40	.21	.11	.50	.13	.13	.57	.44	.71	.13	1.00						
12.PUS	.16	.06	.14	.28	.21	-.05	.39	.30	.54	.10	.59	1.00					
13.UUn	.31	.25	.12	-.02	-.06	.09	.21	.27	.19	.04	.12	.05	1.00				
14.AFr	.21	-.08	.08	.32	.12	.27	.15	.10	.19	-.01	.25	.15	.01	1.00			
15.Int	.13	-.04	.05	.14	.20	.30	-.05	-.02	.16	-.01	.16	.14	.01	.10	1.00		
16.Eng.	.30	-.22	.27	.66	.13	.34	.42	.36	.22	.05	.46	.19	-.11	.33	.13	1.00	
17.WEx	.46	.95	-.05	-.30	-.06	-.34	-.10	.02	.14	.13	.09	.00	.22	-.16	-.03	-.29	1.0
	Ti	Age	Dad	Ed	HNE	UNE	FHO	LHO	FUO	FUS	PUO	PUS	UUn	AFr	Int	Eng	WEx

Levels of Significance
r = .22 at the .05 level   r = .28 at the .01 level
N = 81 (Missing data is accounted for by estimates based on regression equations and calculations from related sample data. One case is omitted because he did not work in his home country).

Key: Ti = Time in the U.S.
Age = Age
Dad = Father's Occupation
Ed = Education
HNE = Home Country Non-formal Education
UNE = U.S. Non-formal Education

FHO = First Home Occupation
LHO = Last Home Occupation
FUO = First U.S. Occupation
FUS = First U.S. Salary
PUO = Present U.S. Occupation
PUS = Present U.S. Salary

UUn = U.S. Employment
AFr = American Friends
Int = Community Integration
Eng = English Proficiency
WEx = Work Experience (Years)

to make reasonable estimates of the missing data. Regression analysis equations and extrapolating from related data were the basic techniques underlying the estimates. Only four variables had less than eighty cases.

The variables having the most significant correlations are educational attainment and English proficiency, each significantly correlated with eleven of the other variables. Age and all of the occupational status variables have significant coefficients with eight or nine of the other variables. First U.S. salary and the community integration index have the least number of significant relationships with one significant coefficient apiece.

The variables on these tables will be examined in detail and individually in the remainder of this chapter. Five other characteristics which have not been included in these tables because they are measured on a nominal scale will also be examined. They are country of origin, problems of immigrants, motive to migrate, intentions for the future, and color.

Educational Attainment

In order for the respondent to be accepted as a valid member of the population under study, he must have completed his formal education in his home country. All the respondents sampled were either clearly educated in their country or received their formal education in this country and subsequently did not qualify.

Educational attainment is measured by the number of grades completed. For this sample the range is from zero to eighteen grades completed. It is believed that the responses were relatively accurate. There is the possibility of exaggeration but this would be a small error since at no time were there obvious illogical incongruences, such as could be determined by cross-references with other personal data.

The immigrants in the sample ranged from two cases with no education to three with graduate professional degrees. The mean and its median are almost equal at 8.6 and 8.5 respectively. The mode is at six and the range is from zero to eighteen years of schooling.

The midpoint of the immigrant's educational distribution is from three to five grades lower than the midpoints of other D. C. population distributions (see the medians in Table 4.3). Half of the immigrants have an eighth grade education or less in contrast to 23 per cent of the total D. C. male population twenty years or older. Similarly, a larger proportion of immigrants lacks a twelve year education than any of the D. C. populations. When considering the percentages with a secondary education or its equivalent, over half (57.2 per cent) the total D. C. male population has completed twelve or more years of school compared to a quarter (25.7 per cent) of the sample. Of the black male population 45.4 per cent have twelve or more years of education (see Table 4.3).

Those finishing sixteen or more years of education comprise 8.6 per cent of the immigrants, significantly different ($Z = 2.59$, $P < .01$) from the 20 per cent of the total male D. C. population and the almost 30 per cent of the male Spanish language population. There are 7.1 per cent of the black population of males twenty years or older in the District with a college degree (see Table 4.3), a proportion not significantly different from the sample proportion of 8.6 per cent ($Z = .536$).

The immigrant's educational attainment is correlated with many of the other variables measured (see Table 4.2). It is significantly correlated with all the occupational status variables (even father's) but not with the measure of unemployment by the most months not worked between jobs. The immigrant's educational attainment is significantly related to his present earnings but not to his first U.S. earnings.

TABLE 4.3

EDUCATIONAL DISTRIBUTION AND MEDIAN OF SAMPLE AND TOTAL BLACK AND SPANISH LANGUAGE POPULATION IN THE DISTRICT

Grades Completed	Sample		D. C. Population[a]		Black[a]		Spanish Language[a]	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Less than 5	13	15.9	13,003	5.8	10,609	7.3	144	3.3
5-6	18	22.0	13,445	6.0	11,171	7.7	192	4.4
7-8	10	12.2	25,497	11.3	19,575	13.5	244	5.6
Total elementary (or equivalent)	41	50.1	51,945	23.1	41,355	28.5	580	13.2
9	13	15.9	12,952	5.7	10,772	7.4	94	2.1
10-11	7	8.5	31,756	14.1	26,968	18.6	326	7.4
12	3	3.7	56,121	24.8	41,286	28.5	1,069	24.4
Total secondary (or equivalent)	23	28.1	100,829	44.6	79,026	54.5	1,489	33.9
13-15	11	13.4	28,078	12.4	14,279	9.8	1,018	23.2
16	4	4.9	17,307	7.7	5,276	3.6	461	10.5
17 or more	3	3.7	27,749	12.3	5,049	3.5	835	19.1
Total higher education	18	22.0	73,134	32.4	24,604	16.9	2,314	52.8
Grand total	82	100.2	225,908	100.1	144,985	99.9	4,383	99.9
Median	8.5		12.3[b]		11.5[b]		13.0[b]	

[a] Males, 20 years and older, calculated from Table 148. Bureau of the Census Population Census: 1970, Detailed Characteristics, District of Columbia.

[b] Males, 18 years and over. Table 197. Ibid.; The median education for whites in the District is 14.5.

The variables measuring whether or not the immigrant has American friends and can speak English are significantly correlated with education but the community integration index is not. Educational attainment is related to work experience in years but not to the immigrant's age or his length of time in the United States. The relationships of educational attainment to the economic variables and to English proficiency will be analyzed in the next chapter.

Non-Formal Education in Home Country and in the United States

Non-formal education is distinguished from formal education in this study. Non-formal education includes training or educational programs which would not be a part of the age-graded hierarchy of elementary, secondary and higher education. Included in the non-formal education category for the sample are English instruction at private institutions, special on-the-job training for which the subject was not paid, uncertified correspondence school courses, night courses or day programs at commercial schools or military courses. In the U.S., some immigrants had participated in manpower training programs.

In coding the non-formal education variable, no attempt was made to differentiate according to duration of the program, type and quality. The non-formal education variable was coded "yes" or "no" according to response of the respondent. Thus, when related to other variables, this variable reflects merely the presence or absence of such training. This avoids the many problems of trying to equate the different types, duration, and qualities of non-formal education.

The immigrants in the sample have participated in non-formal educational programs to a greater extent in the United States than in their own countries. Table 4.4 provides

TABLE 4.4
IMMIGRANTS HAVING ENROLLED IN NON-FORMAL EDUCATIONAL PROGRAMS[a]

	Having Non-Formal Education			
Place	No Response	Yes	No	Total
Home Country	1 (1.2%)	26 (31.7%)	55 (67.1%)	82 (100%)
U. S.	1 (1.2%)	33 (40.2%)	48 (58.5%)	82 (100%)

Difference between proportions with non-formal education in the home country and the United States of those responding: Z=-1.12, N=81, P>.05

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[a] See text for definition of non-formal education.

the percentages. In their home countries, 32 per cent of the sample had had some kind of training, while in the United States the figure is 40 per cent. The difference is not significant, however ($Z = -1.12$, $P > .05$).

For the District of Columbia the Census Bureau tabulates the number of persons having vocational training. For the adult male population in the District the percentage is 33.2.[3] This is not exactly comparable to what is considered non-formal education for this study since non-formal education includes courses that are non-vocational and does not include vocational education provided in the ordinary age-graded hierarchy of the formal system. But the Census Bureau statistics do offer a rough comparison.

The correlation coefficients indicate with which other variables non-formal education is associated. Non-formal education in the home country is significantly correlated only with U.S. non-formal education (see Table 4.2). U.S. non-formal education is related negatively to age and work experience in years, but positively to educational attainment, home training, having American friends, the community integration index and English proficiency.

Occupational Status Characteristics

Respondents were queried about their first and last occupations in their home country, their first and present occupations in the United States, and their father's occupation. In doing the statistical analysis, the occupations were coded according to Duncan's socioeconomic index of occupations.[4] For cross-tabulating purposes, the data was also coded according to the twelve broad occupational groupings used by the Census Bureau.

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[3] Bureau of the Census, Census of Population, 1970: Detailed Characteristics, District of Columbia, Table 149.

As with other questions relying on the respondent's memory, there was some vagueness in naming the first occupation. Part of the problem with this question could have also been the dilemma of what actually constitutes work in an agrarian and materially sparse environment. Many respondents worked on family farms while they were going to school. Often their first job after school was still agricultural work for which they got little or no remuneration. This problem was minimized by defining first job as the first full-time job (after schooling is completed) for which the respondent was paid a wage or salary.

Another problem was the categorization of the immigrant's home occupations according to Duncan's scale which was originally composed for the American occupational structure. A milkman in Guatemala in the rural area is probably closer to being a milk farmer than his American counterpart. The Guatemalan milkman who was interviewed milked the cows in addition to making deliveries. The interviewer always asked for a description of the work to avoid such errors in categorization and job definition.

There were fewer opportunities for error in recording occupations in the United States. The first occupation was the first job that the immigrant named for which he was paid in the United States. There was no time stipulation, which may be a weakness of this study. This characteristic, then, measures the immigrant's ability to obtain employment without too much benefit from the time-consuming effort of cultivating a position through contacts and general knowledge of the city.

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[4] Appendix B in Albert J. Reiss, Jr. et al. Occupations and Social Status (New York: The Free Press of Glencoe, Inc., 1961), pp. 263-275.

In recording present occupation only two cases warrant a brief explanation. In both of these cases, the "present occupation" represents the last occupation. One immigrant was currently enrolled in a training program. He had left his job only a few weeks before. Another immigrant had been injured very severely a year before the interview. He was receiving compensation as a cripple. It is believed that by using the last occupation in these two cases no distortion will appear in the results.

The immigrant's occupational status as measured by the mean is significantly lower in the United States than in his home country for both his first and last occupations (see Table 4.5). The mean for his last home occupation is about 39, (a score representing a status of such occupations as bookbinders, bill collectors, policemen, inspector in industry and managers in some retail trades). The present occupation mean is 23 (reflecting occupations with the same status as operatives of some transportation equipment, tailors, bakers, auto mechanics and attendants). The immigrant's last home occupation is not significantly different from the U.S.[5] mean occupational status of 40 and standard deviation of 25 ($Z = -0.50$). However, the immigrant's present occupation is significantly different from the U.S. mean occupational status ($Z = -6.12$, $P < .01$).

The sample contains almost the full range of status scores for the occupations, 1 to 96 is the entire range compared to 5 to 92 for the sample (see Table 4.1). Immi-

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[5] Christopher Jencks, et al., Inequality (New York: Basic Books, Inc., 1972), p. 178.

TABLE 4.5
DIFFERENCE BETWEEN OCCUPATIONAL MEANS: PRESENT OCCUPATION COMPARED TO OTHER OCCUPATIONS

OCCUPATIONAL STATUS[a]	MEAN	STANDARD DEVIATION	# OF CASES	CORRELATION WITH PRESENT OCCUPATION	STANDARD ERROR OF THE MEAN	STANDARD ERROR: DIFFERENCE IN CORRELATED MEANS[b]	Z RATIO	SIGNIFICANCE
Present	23.4	16.6	82	1.00	1.84		-	-
Father's	33.4	22.8	80	.11	2.56	2.98	-3.35	.01
First Home	28.6	19.9	81	.57	2.23	1.92	-2.70	.01
Last Home	38.6	20.2	81	.44	2.26	2.20	-6.91	.01
First U.S.	17.0	15.1	82	.71	1.67	1.35	2.02	.05

[a] Index scores are based on Duncan's scale, see text.

[b] The standard error of a mean difference in correlated data was used. See J.P. Guilford, Fundamental Statistics in Psychology and Education, p. 177.

grants at the lower end of the status continuum worked as farm laborers in their country and kitchen help and construction laborers in the United States. At the other end of the continuum are government administrators and members of the liberal professions. For all the occupational distributions of the immigrants the median is several points lower than the mean which indicates that there is a positive skewing and that the bulk of the immigrants hover near the lower end of the continuum.

Percentage distributions of the immigrants in Census Bureau occupational categories allow a detailed observation of changes in the occupational structure of the immigrants as they migrate. In Table 4.6 the combined occupational categories are listed in the order of their approximate status. The immigrant's father's occupational distribution includes more than one fifth in the professional-managerial category and another one fifth in the farm category (includes farmers and farm laborers). At the time of the immigrant's first occupation, both categories drop to 12 per cent (ten cases). The blue collar category absorbs almost all the loss of the categories rising from 36 per cent of the father's occupation to 61 per cent of the first occupation. The sales-clerical category increases by five per cent. For the last home occupation the immigrants are represented in the professional-managerial category to the same extent as their fathers and only one immigrant remains in the farm category (a farmer with a business on the side).

In the transition from last home occupation to first U.S. occupation, the most noticeable changes are the decrease in the professional-managerial category and the increase in the service category (Table 4.6). Almost a quarter of the immigrants were in the professional-managerial category before migration while only one-twentieth remained in this category immediately after migration. The service category increased from five per cent (four cases) to 57

TABLE 4.6

DISTRIBUTION OF SAMPLE IN COMBINED BROAD OCCUPATIONAL CATEGORIES[a], RELATED DATA, IN PERCENTAGES

	PROFESSIONAL, TECHNICAL & MANAGERIAL	SALES & CLERICAL	BLUE COLLAR	SERVICE	FARM	TOTAL[b]
Father's job[c]	23.8%	5.1%	36.2%	13.7%	21.3%	100.1% (80)
First home job[c]	12.3	9.9	60.5	4.9	12.3	99.9 (81)
Last home job[c]	24.7	12.4	56.8	4.9	1.2	100.0 (81)
Latin American immigrants[d]	27.4	12.6	51.0	8.3	.7	100.0 (9,776)
All immigrants[e]	36.0	9.6	42.1	8.0	4.4	100.1 (153,122)
First U.S. job[c]	4.9	2.5	35.4	57.3	0	100.1 (82)
Present U.S. job[c]	8.5	8.7	48.8	34.0	0	100.0 (82)
D.C. Spanish Language speakers[f]	37.2	18.7	25.1	18.6	.3	99.9 (3,496)

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[a] See text for explanation.

[b] The number of cases (N) are in parentheses. Sample N's vary due to missing data.

[c] Sample distribution contains males only.

[d] Male and female immigrants admitted in fiscal 1971, who named occupations, from all Central and South American countries (including non-Spanish speaking countries, not including Mexico or Carribean countries). Calculated from Immigration and Naturalization Service, Annual Report, 1971, Table 8.

[e] Immigrants from all countries, males and females, admitted in fiscal 1971, naming occupations, Ibid., Table 10A.

[f] Working males, calculated from Bureau of the Census, Population Census, 1970, Detailed Characteristics: District of Columbia, Table 179.

per cent (47 cases). For the immigrant's present occupation, the service category is no longer the largest although it still includes one third of the sample. The blue collar group increased from 35 per cent at first U.S. occupation to 49 per cent, still less than the 57 per cent of sample in this category before migration. Nevertheless, the blue collar category and the service category together comprise 84 per cent of the sample at the time of present occupation. The farm category disappeared in the transition from home country to the United States and the professional-managerial category fell from 25 per cent to almost nine per cent of the sample, at the time of present occupation.

The distribution of last home occupations as profiled by the broader groupings more closely resembles the distribution of Central and South American immigrants than the distributions of all immigrants or the Spanish language population in the District of Columbia (Table 4.6). The similarity of the sample and Latin American immigrants' occupational distributions parallel each other closely (see Table 4.7 for the chi-square). An examination of the distributions, however, shows that the similarities break down in the narrower occupational classifications. The sample's present occupational distribution and the distribution for the Spanish language population of the District have few similarities. The Spanish language population is more strongly represented in the professional-managerial category than is the sample (37.2 per cent versus 8.5 per cent, see Table 4.6). The proportion of the sample members in the blue collar and service occupations is almost twice the proportion for the D. C. Spanish language population as a whole (see Table 4.6).

The correlation coefficients among the variables of the immigrant's occupational status in Table 4.2 are significant for all variables at the .01 confidence level. The correlation coefficient between first and last home occupation is .69 and between first and present U.S. occupation

TABLE 4.7

OCCUPATIONAL CATEGORIES BY SAMPLE AND CENTRAL AND SOUTH AMERICAN IMMIGRANTS (CASES AND PER CENTS)

Last Home Occupation	Sample	Central and South American Immigrants[a]
Professional and Managerial	20 (24.7%)	2679 (27.4%)
Sales and Clerical	10 (12.4)	1232 (12.6)
Blue Collar	46 (56.8)	4986 (51.0)
Service and Farm[b]	5 (6.1)	875 (9.0)
Total	81(100.0%)	9772(100.0%)[c]
	Chi-square=1.48[d] P>.05	df = 3

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[a] Source: See Table 4.6

[b] Combined category to avoid small N in cells.

[c] Differs from N = 9776 because of rounding errors.

[d] Expected frequencies were derived from the proportion of the population immigrants in the four categories rather than the usual procedure. This is the application of the chi-square for testing the "goodness of fit" of the data to a specified distribution.

is .71. Neither these two coefficients nor any of the correlation coefficients of the occupational status variables are significantly different from each other. Father's occupation is significantly correlated with the immigrant's home occupations, but not with his U.S. occupations.

Earnings Before and After Immigration

Immigrants were asked how much money they earned in their countries during a week and a year at the time of their first and last home occupations. The answers concerning first home earnings were very vague or simply unrecollected, and were, therefore, not analyzed. Their responses to questions about their last weekly earnings appeared to be more reliable. A question on yearly income was used as a cross-check, but this too was usually not reliable. The immigrant simply multiplied the weekly or bi-weekly earnings to arrive at the annual. For earnings in the United States, the immigrants were asked how much they earned at their job. Some were paid by the hour, others weekly. The interviewer attempted to arrive at a weekly total including part-time jobs. Weekly and hourly earnings were then calculated. When both alternatives are used in correlational analysis, their correlations with other variables are almost identical (the correlation of weekly and hourly earnings is .97). Consequently, it was decided to use the weekly earnings as the basis for comparison. This procedure circumvented problems arising when the immigrant had two jobs, counted on overtime, or depended on tips.

In order to make the earnings data comparable across national boundaries and time periods, all the data were set equivalent to the 1963 dollar. This was then reconverted at the appropriate rate when compared to other data, for example, the 1970 Census data. The consumer price index was used to account for different rates of inflation.

Foreign national currencies were not simply converted to dollars at the official exchange rate. This would distort their actual value since the standards of living differ among countries. Instead ratios were used based on the purchasing power of national currencies in the Latin American market. This "market basket" technique was used by Braithwaite[6] to develop purchasing power equivalents for the Latin American currencies and the United States dollar. The official exchange rate undervalues currencies of all but two Latin American countries. For example, using official exchange rates, Argentina's per capita Gross Domestic Product (GDP) in 1960 was US $561, while its purchasing power was equivalent to US $1045. Bolivia, one of the countries with an over-valued exchange rate in terms of purchasing power (by only one dollar, however), has a per capita GDP of US $102 using the official exchange rate and US $101 using Braithwaite's purchasing power index. This procedure was also used by Myers in his study of alien students from Peru.[7] (See Appendix C for a detailed discussion of the conversion procedures used in this study.)

Findings for the immigrant's earnings show that his earnings have increased from last home earnings to present earnings in the United States. The mean for the immigrant's present earnings is $140 a week, significantly greater than his last home earnings[8] or his first U.S. earnings,[9] both about $90 a week (see Table 4.1). Median earnings at the three time periods also show steady improvement. Before migrating to the United States, half of the immigrants of the sample were earning $46 a week or less. At the time of their first job in the United States, half of the immigrants were earning $86 or less and by the time of their present job their median weekly earnings had increased to 2.7 times their last home salary, to $126 (see Table 4.1). The estimated mode rose from $41 per week for their last home earnings to $97 per week for their present earnings.

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[6] Stanley N. Braithwaite, "Real Income Levels in Latin America," The Review of Income and Wealth, (XIV, No. 2, June 1968), pp. 113-182.

[7] Robert Myers, Education and Emigration (New York: David McKay Co., 1972), pp. 288-291.

[8] $t = 2.61$, df = 150, $P < .01$.

[9] $t = 5.16$, df = 152, $P < .01$.

Although the upper limit of the range decreased from $981 per week at the time of the last home earnings to $660 at the time of their present earnings (in constant dollars), a greater percentage of immigrants moved into higher rather than into lower income brackets. Table 4.8 presents the earnings distributions for the sample and for populations of the District of Columbia on a yearly basis (assuming year-round work at same weekly rate). In the $15,000 or more a year bracket, the number of immigrants decreases from 5 (6.5 per cent)for last home earnings to 1 case (1.3 per cent) for present earnings (see Table 4.8). Almost three quarters (73.7 per cent) of the immigrants were in the $3,999 a year or below income brackets before migrating while at the time of present earnings only one twentieth (5.2 per cent) of the immigrants earned so little (see Table 4.8).

There is less dispersion in the U.S. earnings distributions for the immigrants than in their home earnings distribution. The range of weekly earnings for the last home occupation spans almost $1000 while for the present occupation the range is about $600 (see Table 4.1). The standard deviation of incomes drops by half from $151 to $75 and the coefficient of variation (the ratio of the standard deviation to the mean) from 1.70 to .53 (see Table 4.9).

When comparing the findings of the sample with other populations in the District of Columbia, the immigrants

TABLE 4.8
DISTRIBUTIONS OF SAMPLE AND D. C. MALE EXPERIENCED CIVILIAN LABOR FORCE, BY ANNUAL EARNINGS

	Sample			District of Columbia[a]		
Annual Income	Home Earnings[b] (1)	First U.S. Earnings[b] (2)	Present Earnings[b] (3)	Total D. C. Population[c] (4)	Negro[c] (5)	Persons of Spanish Language[c] (5)
$1-1,999 or loss	40.8%	0.0%	0.0	11.0%	11.1%	12.4%
2,000-3,999	32.9	37.2	5.2	11.0	11.5	13.2
4,000-4,999	7.9	26.9	14.5	8.7	10.4	9.4
5,000-5,999	5.3	17.9	17.1	10.8	13.3	9.7
6,000-6,999	0.0	11.5	25.0	12.0	14.8	9.9
7,000-7,999	2.6	2.6	13.2	10.6	12.7	8.2
8,000-9,999	3.9	2.6	14.5	13.7	15.2	11.7
10,000-14,999	0.0	1.3	9.2	11.6	8.5	12.8
15,000 or more	6.5	0.0	1.3	10.6	2.6	12.6
Total	99.9%	100.0%	100.0%	100.0	100.1%	99.9%
N =	76	78	76	172,944	118,856	3,470
Median[d] =	$2,367	$4,475	$6,528	$6,711	$6,258	$6,530
Median, year-round workers	$2,367	$4,475	$6,528	$7,489	$6,793	$7,771

[a] Percentages calculated by the investigator, working males, 16 years and over. Source: Bureau of the Census, Census of Population, 1970: Detailed Characteristics, District of Columbia, (PC(1)D10), Table 175. Includes employed and experienced unemployed.

[b] 1970 dollars

[c] 1969 dollars

[d] Sample mediams for yearly income are based on the project of weekly earnings medians, assuming that the sample will work year-round at the same rate of earnings. These are actually over-estimates for the true value.

TABLE 4.9

WEEKLY EARNINGS OF IMMIGRANTS AT THREE TIME PERIODS, WEEKLY INCOMES OF U.S. AND D.C. POPULATIONS IN 1970 DOLLARS[a]

	Weekly Mean Earnings	Standard Deviation	Coefficient of Variation	Range	# of Cases
Sample Data					
Last home earnings	$ 89	$151	1.70	$9-981	76[b]
First U.S. earnings	92	32	.34	46-256	78[b]
Present U.S. earnings	140	75	.53	53-660	76[b]
Census Data					
U.S. males[c]	181	118	.65	-	37,068,000
Total D. C. males[d]	157	-	-	-	223,690
White D. C. males[d]	228	-	-	-	77,981
Black D. C. males[d]	119	-	-	-	142,924
Spanish language population in D. C. males[d]	159	-	-	-	4,244

[a] The weekly mean earnings are not exactly comparable. Earnings from sample data refer to last week at work and may include earnings from more than one salary but does not include other types of income. The D.C. data weekly earnings is derived from annual income and includes persons who do not work year-round while U.S. males refers only to year-round workers. Thus, the D.C. data probably underestimates the mean earnings in comparison to the sample and U.S. population (assuming that income from sources other than occupation approaches zero).

[b] Total number of cases in the sample varies due to missing data in some categories.

[c] Christopher Jencks, et al. *Inequality* (N.Y.: Basic Books, 1972), p. 213, from Census Bureau statistics, "Income in 1968," male, year-round workers. 1968 dollars were converted to 1970 dollars by the investigator.

[d] Calculated by dividing mean annual incomes by 52 and adjusting to 1970 dollars from 1969 dollars. Males with incomes, 18 years and over. Source: Bureau of the Census, *Census of the Population: 1970, Detailed Characteristics, District of Columbia* (PC(1)-D10), Table 107.

resemble the black population more than the total population or the Spanish language population. Table 4.9 allows the differences between the means to be tested statistically although the means are not exactly comparable. The means for the populations of the District are for all males with incomes including those who are not working; they should be considered lower than the means for the working males only. In addition, the sample means are derived by multiplying the weekly earnings thus assuming year-round work, which is not accurate for all cases. The sample means should be considered over-estimations of the true means. The differences between the means show that the white ($t = 10.16$, $df = 75$, $P < .01$) and the Spanish language populations ($t = 2.19$, $df = 75$, $P < .05$) have mean earnings significantly greater than that of the sample. Since the population means are underestimated, the differences between more comparable data would be even greater. The mean salary for the sample is significantly greater ($t = 2.42$, $df = 75$, $P < .05$) than the mean salary for the black population but the validity of this finding is less certain than the other findings in view of the underestimation of the population means.

The frequency distributions in percentages of annual incomes for the sample and the working male populations in the District of Columbia allow certain comparisons to be made. When compared to populations of the District of Columbia, the percentage of immigrants earning more than $10,000 a year is almost equal to that of the black male workers in the District and is half the proportion of the total population and the Spanish language male workers (see Table 4.8). For the sample, 10.5 per cent are earning $10,000 or more, which is not significantly different from the 11.1 per cent of the blacks but is significantly different from the 22.2 per cent of the total D. C. population ($Z = 2.43$, $P < .05$) and the 25.4 per cent of the Spanish language population ($Z = 2.98$, $P < .01$).

An examination of the other end of the income distribution reveals that immigrants have a lower proportion earning under $4,000 a year, the approximate poverty level cut-off point for families of four, than other groups of males in the District. Only 5.2 per cent of the immigrants earn less than $4,000 while 22 per cent of total working males, 22.6 per cent of working blacks, and 25.6 per cent of the working Spanish language males earn that little (see Table 4.8).

The immigrants have a greater proportion in the middle range income, between $4,000 and $10,000, than the other D. C. groups. Eighty-four per cent of the sample are in this range while compared to 56 per cent of all working males, 66 per cent of black working males and close to one half of the working Spanish language males. Although the median earnings of all workers in all the groups being discussed vary by only about $500, a more realistic comparison of the medians for only the year-round workers shows that the immigrant's median is not significantly different from the median income for year-round total male and black workers ($Z = -.45$ and $Z = -1.71$, respectively). The median earnings of the sample and the male year-round Spanish language workers are significantly different ($Z = -2.69$, $P < .01$).

Demographic Characteristics

Age

The typical immigrant in the sample is thirty-seven (37) years old as indicated by the mean (see Table 4.1). The oldest immigrant in the sample is 74 and the youngest 19 years old. Eighty-two per cent of the sample is between twenty-five and fifty years of age. The sample median of 34 years of age is very close to the median age of 33.8 for working males 16 years and over in the Spanish language population and is not significantly different from the median age, 36.7, of the total population in the District of Columbia ($Z = -1.71$, $P > .05$). The median age for the sample and working males in the black population are 34 and 25.4 years of age respectively, which are significantly different ($Z = 5.44$, $P < .01$).[10]

Number of Dependents

The immigrants in the survey were asked how many persons, relative or otherwise, were economically dependent upon them either in the U.S. or abroad. Because of the tax law excluding exemptions for dependents abroad this item is not equivalent to Internal Revenue's definition of dependence.

The number of dependents for the sample range from zero to eight, with 3.3 as the mean and 2.5 as the median (see Table 4.1). Table 4.10 presents the distribution. Seventy-seven (94 per cent) immigrants claimed to have one or more dependents. Ten (12.2 per cent) immigrants claimed only one dependent. In order to make data more comparable to the Census Bureau data for the District of Columbia it must be assumed that those indicating one dependent are referring to a wife. Table 4.11 combines the zero and one dependent category into the "none" categories for the sample and compares the sample distribution to that of the white, black and Spanish language populations in the District in terms of number of children. The sample distribution more closely resembles the distribution of the black District population than the other populations.

The number of dependents for the immigrant correlates significantly with age but is not significantly associated with any other variable as determined by the correlation coefficients.

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[10] The population medians were calculated from Bureau of the Census, Census of Population: 1970, Detailed Characteristics, District of Columbia. Table 164.

TABLE 4.10
NUMBER OF DEPENDENTS OF IMMIGRANTS IN SAMPLE

Number of Dependents	Number of Cases	Per Cent of Cases
0	5	6.2
1	10	12.3
2	22	27.2
3	10	12.3
4	13	16.0
5	13	16.0
6	5	6.2
7	1	1.2
8	2	2.5
Total	81	99.9

Note: "Dependent" refers to any person economically dependent upon the respondent either in the United States or abroad. The person does not have to be a relative.

TABLE 4.11
CHILDREN OF SAMPLE AND D. C. POPULATIONS, FAMILIES WITH MALE HEADS, IN PERCENTAGES

Number of Children	D. C. Populations[a]				Sample
	Total	White	Black	Spanish Language	
None	26	43	22	40	18
One	21	20	21	24	27
Two	22	21	23	16	12
Three	14	10	15	10	16
Four or more	17	7	20	9	27
Total	100	101	101	99	100

[a] Source: Calculated from Bureau of the Census, *Population Census, 1970, Detailed Characteristics: District of Columbia*, Table 156.

Length of Time in the United States

One immigrant sampled had been in the United States for 26 years. Six others have been here for more than ten years. The mean for the sample is 5.23 years but the median is less, 3.9 years (see Table 4.1), and the mode is even lower, 3 years. Ninety-one per cent of the sample arrived in the United States during the last decade. This compares to 83 per cent of the total alien population according to the Census Bureau.[11] In the test of the difference in proportions, the sample proportion is not significantly different from the proportion of the total immigrants arriving here during the last decade ($Z = 1.93$, $P > .05$).

Years in the Labor Force

The range of work experience in years for the sample is from four to fifty-seven years (see Table 4.1). The median is 17.3 years. Eighty-eight per cent of the cases fall within the range of zero to thirty-seven years of work. Years in the labor force correlate with age at .95. Work experience in years and education have a significant coefficient of -.30 while age and educational attainment have a non-significant coefficient of -.16 (see Table 4.2). Other than correlating significantly and negatively with English proficiency, time in the U.S. is not significantly related to the other variables. In later chapters, when variables are partialled out of principal relationships, work experience in years, age and time are among those selected to be partialled.

Order of Birth

Data was collected on the immigrant's order of birth among his male siblings. Table 4.12 shows the frequency distribution for this data. Almost 87 per cent of the sample were within the first three male children born in his family. The largest number of immigrants, thirty-three cases (40 per cent), are only children or first born. The immigrant's order of birth among male siblings is not significantly correlated with any of the other variables measured.

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[11] Ibid., Table 144.

Color

Interviewers observed and classified the respondent by his skin color and physical characteristics in three categories: brown, white and black. The classification criteria were as follows: (1) respondents who could pass for white North Americans by their physical traits in the judgment of the interviewer were classified as "white," (2) respondents who could pass for black North Americans by their physical traits were classified as "black," and (3) respondents who did not fit the "white" or "black" categories and had some or all the features of the "mestizo," i.e., straight hair, dark eyes and brown skin, were classified as "brown." Almost sixty per cent of the sample was brown (or mestizo), thirty-one per cent white and the remainder were black (see Table 4.13). The mean education for these groups do not differ significantly from one another. Similarly, their mean earnings are not significantly different despite their spread (see Table 4.13 for mean education and mean earnings).

The Census Bureau categorizes foreign born persons by country and white versus non-white. The sample is significantly different from the D. C. Latin American foreign-born by color when the brown and white groups in the sample are combined (see Table 4.14). The sample is 90 per cent white while the foreign-born population is 80 per cent.

TABLE 4.12

FREQUENCY DISTRIBUTION OF SAMPLE BY ORDER OF BIRTH AMONG MALE SIBLINGS

Order of Birth Among Male Siblings	Cases	Per Cent
Orphan	1	1.2
Only or First*	33	40.2
Second	26	31.7
Third	12	14.6
Fourth	6	7.3
Fifth	2	2.4
Sixth	0	0
Seventh	1	1.2
No data	1	1.2
Total	82	99.8

*Four sample members are only children.

TABLE 4.13
FREQUENCY DISTRIBUTION OF SAMPLE, MEAN EDUCATION, MEAN WEEKLY SALARY, BY COLOR

			Education		Weekly Salary (1970 Dollars)		
Color	Cases	Per cent	Mean	S. D.	Cases	Mean	S. D.
Black	8	10.3	8.5	2.5	8	125	94
Brown	46	59.0	8.3	4.3	43	137	47
White	24	30.8	8.9	3.9	21	147	117
Total	78[a]	100.1			72[b]		

[a] Missing data accounts for departure from base N = 82.

[b] Includes only cases for which there are salary data.

TABLE 4.14

RACIAL COMPOSITION OF SAMPLE AND LATIN AMERICAN FOREIGN BORN IN THE DISTRICT OF COLUMBIA (CASES AND PER CENTS)

Race	Sample	Latin American Foreign Born[a]
White[b]	70 (89.7%)	4506 (80.0%)
Non-White	8 (10.3%)	1128 (20.0%)
Total	78 (100.0%)	5634 (100.0%)
Chi-square = 4.63[c]	P<.05	df = 1

[a] Includes males and females of all ages. Brazil is excluded; Mexico, Cuba and the Dominican Republic are included. Source: Bureau of the Census, Census of the Population: 1970, Detailed Characteristics, District of Columbia, Table 141.

[b] Includes mestizo or brown.

[c] Expected frequencies were derived from the proportions of the foreign born population in the two categories rather than the usual procedure. This is the application of the chi-square for testing the "goodness of fit" of the data to a specified distribution.

Country of Origin

El Salvador is the country of origin which predominates in the sample. Twenty-eight of the total eighty-two immigrants are from El Salvador (see Table 4.15). Guatemala is the country of origin for the next highest number of immigrants although this number is less than half for El Salvador (13 compared to 28). The third largest group (8 cases) of immigrants is from the Dominican Republic. Together these three countries account for sixty per cent of the sample. The three countries contributing the majority of immigrants do not have significant differences in their mean education. Immigrants from El Salvador have a mean education of 8.3 (S.D. = 3.8, N = 28); from Guatemala, 7.2 (S.D. = 3.1, N = 13), and Dominican Republic, 9.6 (S.D. = 3.9, N = 8). Further analysis within the sample was not conducted due to the small numbers involved.

The sample immigrants were compared to immigrants reporting in the D. C. Alien Address Report in 1972. The Z-tests in Table 4.16 indicate that the sample and the immigrants with permanent resident status (the same status as the sample immigrants) are significantly different in the number of immigrants from South America, Central America and Mexico but not from the Spanish-speaking West Indies. The over-all chi-square is significant.

Cultural Integration Characteristics

English Language Proficiency

English proficiency was evaluated on a two-part test. The first part of the test consisted of a series of oral questions commonly asked of foreigners. The questions varied in grammatical structure from the simple present tense to the past, past perfect and future tenses. Identical questions were asked in all interviews except if the interview was being held in English (see Appendix B, Question #33). Respon-

TABLE 4.15

COUNTRY OF ORIGIN OF SAMPLE COMPARED TO OTHER SOURCES OF IMMIGRANT DATA (IN PERCENTAGES)

	Sample		Permanent Residents[a] in D.C. Alien Address Report, 1972[b]		1970 Census, Foreign Born in the District of Columbia[c]	
	Number of Cases	Per Cent	Number of Cases	Per Cent	Number of Cases	Per Cent
Argentina	1	1.2	110	3.8	316	6.4
Bolivia	4	4.9	104	3.6	254	5.1
Chile	3	3.7	133	4.6	474	9.6
Colombia	1	1.2	251	8.8	365	7.4
Costa Rica	0	0.0	67	2.3	101	2.0
Cuba	3	3.7	256	8.9	649	13.1
Dominican Republic	8	9.8	225	7.9	281	5.7
Ecuador	5	6.1	272	9.5	392	7.9
El Salvador	28	34.2	292	10.2	173	3.5
Guatemala	13	15.9	314	11.0	454	9.1
Honduras	2	2.4	63	2.2	110	2.2
Mexico	4	4.9	225	7.9	246	5.0
Nicaragua	5	6.1	136	4.8	196	4.0
Panama	1	1.2	146	5.1	171	3.4
Paraguay	1	1.2	18	0.6	0	0.0
Peru	3	3.7	198	6.9	487	9.8
Uruguay	0	0.0	31	1.1	104	2.1
Venezuela	0	0.0	20	0.7	189	3.8
Total	82	100.2	2,861	99.9	4962	100.1

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[a] Includes males and females of all ages.

[b] Immigration and Naturalization Service, 1972 Address Report Cards Received By State of Residence, Nationality, and Status, (District of Columbia), unpublished table.

[c] Includes males and females of all ages. U. S. Bureau of the Census, Census of the Population, Detailed Characteristics, District of Columbia: 1970 (PC(1)D10), Table 141.

TABLE 4.16

COUNTRY OF ORIGIN BY SAMPLE AND PERMANENT RESIDENTS IN THE DISTRICT OF COLUMBIA ADDRESS REPORT OF 1972 (CASES AND PER CENTS)

Geographical Origin	Sample	Spanish American Immigrants[a]		Z
Cuba and Dominican Republic	11 (13.4%)	515	(18.0%)	.99
Central America and Mexico	53 (64.6)	1,226	(42.9)	3.00**
South America	18 (22.0)	1,120	(39.1)	2.48**
Total	82 (100.0)	2,861	(100.0)	

Chi-square = 16.11[b] P<.01 df = 2

**Significant at the .01 confidence level dents unable to respond to the first simplest questions were given a "one" rating. Respondents answering these first questions in intelligible (not necessarily grammatically correct English) earned a "two" rating (one word sentences were not counted). Respondents answering all the questions and demonstrating their ability to use the appropriate tenses were given a "three" or "four" rating depending on how well they did on the second part of the test, the literacy test. The interviewer went beyond the questions listed in Appendix B when necessary in order to make an accurate evaluation of the respondent's English skills. If the interview was held in English, the first part of the test was skipped.

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[a] Includes male and female permanent residents of all ages. Only Spanish-speaking countries were included. Source: Immigration and Naturalization Service, 1972 Address Report Cards Received by State of Residence, Nationality, and Status(District of Columbia), unpublished table.

[b] Expected frequencies were derived from the proportions of the permanent residents in the three categories rather than the usual procedure. This is the application of the chi-square for testing the goodness of fit of the data to a specified distribution.

The second part of the test consisted of reading a paragraph in English followed by questions on simple comprehension. The paragraph is from a fourth grade reading text but the content deals with a topic which is appropriate for adult immigrants (see Appendix B, Question #34). The reading test was used to further refine the rating of the respondent. The reading test served as the criterion for a "four" rating.

Although the word "test" has been used in referring to the evaluation of English language proficiency, it was not presented to the respondents as such. The questions were selected because they were natural to the situation and whenever possible the interview was held in English, which readily lent itself to an evaluation of oral English. The reading passage was only introduced into the interview if the respondent showed a facility in oral English.

On the four point scale, thirty-five per cent (29 cases) achieved a rating of one (see Table 4.17). Almost twenty per cent (15 cases) achieved a rating of "two" while forty-six (38 cases) were given a rating of "three" or "four." Only sixteen per cent (13 cases) could speak and read at the level of the fourth rating. The mean for

TABLE 4.17
ENGLISH PROFICIENCY RATINGS OF SAMPLE IN NUMBER OF CASES AND PER CENTS

English Proficiency Rating	Number of Cases	Per Cent
1	29	35.4
2	15	18.3
3	25	30.5
4	13	15.9
Total	82	100.0

the sample on this four point scale is a rating of 2.3 and the median is 1.8 (see Table 4.1).

The English proficiency variable correlates significantly with the following eleven variables: time in the U.S., negatively with age, father's occupation, educational attainment, non-formal education in the U.S., first home occupation, last home occupation, first U.S. occupation, present U.S. occupation, American friends, and negatively with work experience in years (see Table 4.2). The relationships of English proficiency and the measures of economic success, educational attainment, age and time in the U.S. will be taken up in more detail in Chapter Five.

Community Integration and North American Friends

Although they were not a composite index, these two variables were designed to measure the degree of integration into the District community and into the North American culture. The community integration index indicates involvement in the Latin American community while the "North American friends" variable indicates assimilation into the society of the United States. Respondents were asked if they had North American friends outside of work. The responses were recorded as "yes" or "no." The community integration was determined by whether or not the immigrants knew who the community leaders were and by whether or not they were members of any organization. They were then given a rating of 1 for two "no" answers, 2 for one "yes" and one "no" answer to either question and 3 for two "yes" answers.

Fifty-six of the respondents said that they had American friends (see Table 4.18). Thirty-two per cent said that they either had heard of community leaders or were members of an organization. Fifteen per cent said that they had heard of the community leaders and were members of an organization. The correlation coefficient between these two vari-

TABLE 4.18

IMMIGRANTS HAVING AMERICAN FRIENDS AND THEIR COMMUNITY INTEGRATION INDEX

	NUMBER OF CASES[a]	PER CENT
American friends[b]		
Yes	56	71.8
No	22	28.2
Total	78	100.0
Community integration[c] index		
1	25	32.1
2	41	52.6
3	12	15.4
Total	78	100.1

[a] Number of cases do not total 82, the sample total, because of missing data.

[b] See text for explanation of item.

[c] See text for explanation of item.

ables is not significant and they each seem to be associated with only one common variable, U.S. training (see Table 4.2). The North American friends variable correlates significantly with educational attainment (.316, significant at the .01 level) with U.S. training (.266), with present U.S. occupation, (.249) and with English proficiency (.333, significant at the .01 level). The community integration index is significantly correlated only with U.S. training (at the .01 level.

Subjective Characteristics

Motives for Migration

The immigrants surveyed were asked what motivated them to come to the United States. Over half the sample (45 cases or 55 per cent) responded that they were economically motivated (see Table 4.19). The typical response in this category was the desire to have a better job or to earn more money. Sometimes the emphasis was placed on home country conditions and other times on the premise that the United States offered greater opportunities. The next largest group consists of those immigrants who wished to learn English, numbering 14 immigrants or 17 per cent of the sample (see Table 4.19). The third largest group gave political reasons for their migration.

The mean earnings and mean education were calculated for each group. The mean education for immigrants motivated by the desire to learn English are not significantly different (see Table 4.19 for the means). There was a significant difference, however, between the mean education for those motivated by economic reasons and those by political reasons ($t = 3.22$, $df = 51$, $P < .01$). Although the mean weekly salary is $106.50 (S.D. = 13.4) for the educationally motivated compared to $128 (S.D. = 50.1) for the economically motivated, the difference is not significant. Hence, the politically motivated have a higher mean education than the

TABLE 4.19

NUMBER OF CASES AND MEAN EDUCATION OF IMMIGRATION MOTIVES

	Number of Cases	Per Cent	Education	
			Mean	S. D.
Economic reasons	45	54.8	7.3	3.8
Learn English	14	17.1	8.7	3.6
Reunion with family	5	6.1	9.8	2.9
Personal reasons	3	3.7	13.0	3.7
Educational opportunity	4	4.9	9.8	2.6
Political reasons	8	9.8	11.9	2.7
Medical reasons	1	1.2	6.0	0
No reason given	2	2.4	14.0	.7
Total	82			

economically motivated but their mean salary is not significantly greater.

Intentions of Immigrants to Remain

The immigrants were questioned about their plans for remaining in the United States. Of those who responded, 75 per cent indicated that they would remain, 16 per cent planned on leaving, and eight per cent were undecided (see Table 4.20). This percentage profile can be compared to profiles of related data. Myers studied foreign students in the United States and tabulated their intentions according to their visa classifications from a census of foreign students from all countries conducted by the Institute of International Education and from his own survey of foreign Peruvian students. Table 4.20, comparing the sample with Myers' subjects, indicates that the members of the sample closely resemble the distribution for student immigrants from all countries; there are differences of at the most only five percentage points between them for any one category (chi-square = 2.95, df = 2, $P > .05$). The Peruvian students with immigrant visas (the same kind held by the sample in this study) have a distribution which is very different from both the sample and the immigrant students from all countries.

In order to ascertain whether or not educational attainment is associated with the intentions of the immigrants, the analysis of variance technique was applied. The resulting F was not significant. The educational means for those who intend to remain is 8.3 (standard deviation = 3.3) and those intending to leave is 10.5 (standard deviation = 5.5). These means were not statistically different on a t-test either. The undecided category's mean education and standard deviation are only decimal points different from the same statistics for those remaining. Educational attainment by these tests is not demonstrated to be associated with the immigrant's intentions.

TABLE 4.20

INTENTIONS OF IMMIGRANTS IN SAMPLE COMPARED WITH IMMIGRANT STUDENTS (PERCENTAGES, MALES ONLY)

Intentions	Sample Immigrants	Student Immigrants[a]	Peruviar Student Immigrants[b]
Remain in the U.S.	75.3%	73.2%	25.0%
Leave	16.4	21.7	44.1
Undecided	8.2	4.7	30.9
Total	99.9	99.6	100.0
N =	73[c]	4614	68

[a] Source: Robert Myers, Education and Manpower (N.Y.: David McKay, 1972), p. 121. This data is a recalculation of Myer's calculations of the 1964 census by the Institute of International Education (IIE).

[b] *Ibid.*, p. 264. 1964 Survey.

[c] Does not include non-responses.

Problems as Immigrants

The immigrants in the sample were asked what their greatest problem as an immigrant was in the United States. Table 4.21 presents the results. The language barrier was the greatest problem of the majority of the immigrants. The next largest category comprises immigrants who felt that they had no problems worth mentioning. Immigrants in the category with the highest mean education perceived "job dissatisfaction" as their greatest problem. The mean for this category is 11.3 compared to 8.1 years of education for the "English" category (see Table 4.21). This is a significant difference at the .01 level on the t-test (t = 4.01, df = 47).

Discussion

The findings will be discussed in three sections. In the first section the characteristics of educational attainment, occupational structure and income will be dealt with briefly. Their interrelationships are taken up in detail in the following chapters. In the second section, the relationship of certain characteristics of the immigrants to their educational attainment will be discussed. In the third section, certain characteristics of the sample and related populations will be compared.

Educational Attainment, Occupational Status, and Income of Male Spanish-Speaking Immigrants

The educational attainment of the immigrants is very low when compared to U.S. standards. The mean is four grades below the District average. The high school dropout rate is about one and one half times the rate for the blacks in the District, the population with lowest mean education in the census. However, the educational status

TABLE 4.21
NUMBER OF CASES AND MEAN EDUCATION IN PROBLEM CATEGORIES OF THE SAMPLE

Problem	Number of Cases	Per Cent	Education Mean	Education S. D.
English	42	51	8.1	3.6
Housing	8	10	7.3	3.5
Job Dissatisfaction	7	9	11.3	4.1
Personal	5	6	8.0	2.4
Unfamiliarity with Community	3	4	8.0	1.3
None	17	21	9.7	4.6
Total	82	101		

of the immigrants shifts dramatically if one substitutes Latin American standards in place of the educational standards of the United States. For example, a person with eight years of schooling (close to the sample mean) in El Salvador is better educated than 96 per cent of the population six years or more of age in 1960 (the last year for which there are figures).[12] In the U.S., he is at the 23rd percentile. In short, in his own country, the immigrant is advantaged but in the United States, if one judges by the U.S. standards, he is among the most educationally disadvantaged.

In migrating to the United States, the immigrants suffered a loss in occupational status. While their home occupational status was equivalent to the mean status of U.S. workers, their U.S. status was significantly lower than the U.S. mean status. However, the loss does not appear too great qualitatively, except perhaps at the professional and managerial level. In many cases, there are changes from one kind of blue collar work to another. There may be a change in that the job requires less manual skill but it will still be physical labor. The greatest change is for those entering service occupations. In these jobs there are demands for social skills in place of manual skills. For many of the immigrants, this could be a welcome change; for others, it is a misuse of needed skills.

The large changes in the occupational distribution occurred because the sample members in the highest and lowest status occupations tended to coalesce in the blue collar and service occupations upon migrating to the United States. Over half of the immigrants enter service occupations in their first U.S. jobs. By the time of the present occupation a third are still in this category and almost a half are in the blue collar occupations. Apparently the immigrants tended to move into the blue collar occupations because they were more like their previous home occupations. It appears that those who cannot move up from bus boy or dish washer to waiter or cook's assistant would be drawn toward the more higher paying jobs in the blue collar sector for which they have had some related experience.

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[12] Estimated from Statistical Abstract of Latin America, 1964, Table 10; and America en Cifras, 1970; Situacional Cultural, Cuadro 501-04.

It is interesting to note that the majority of the male Spanish language population and of the sample members do not have service occupations. This contradicts a stereotype of the Spanish-speaking immigrant, although there is a tendency to pass through a "bus-boy rite of passage" into the U.S. world of work[13] during the first U.S. occupation.

The change of societal context from Latin America to the United States does not appear to make any difference in the correlation between first job and last job in either country. Although the means and the frequency distributions indicate a general upward shift, the correlation coefficients indicate the remarkable stability in the relationship between the first and last or present occupation. The coefficients for first and last home occupation and for first and present U.S. occupation are almost identical ($r = .69$ and $r = .71$, respectively).

There are two possible interpretations. One can conceive of the immigrant as making a fresh beginning in the

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[13] Migration implies a disassociation from the familiar world and a transition into a new world; initiation ceremonies do not only ritualize the transition but also they prepare and socialize. J. A. Jackson, "Migration - Editorial Introduction," Migration (New York: Cambridge University Press, 1969), p. 2.

United States and note that the effects of first job in the U.S. has the same influence on his present job as his first job had on his last job in his home country. The act of migration does not free the immigrants as a group from the constraints on their occupational mobility. These constraints appear to operate similarly in the home country as well as in the United States. Thus, there is movement through the occupational ranks of the immigrants but there is no more leeway in the United States to change relative position in the occupational structure than there was in the home country in the time period studied. There is evidence, however, that talent and skill play a bigger role for immigrants in the U.S. since father's occupation is not correlated with U.S. occupations.

The finding can also be interpreted as supporting evidence for a thesis suggested by Ginzberg who noted that there is a tendency in the individual's educational and occupational history to channel the individual in a predetermined direction. For the typical person, this occupational determination is irreversible; once set into motion little can be done by the individual to reverse its inertia.[14] The findings of this study contribute an additional premise, namely that the impact of occupational history tends to be constant for immigrants as a group even in different national settings if one conceives of their careers as beginning again upon migrating.

The over-all effect of home-country career beginnings apparently has the same impact on the immigrant's present U.S. occupation as the U.S. worker's career beginnings has on his present occupation. The correlation coefficient for first home to present U.S. occupation for the sample is

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[14] Eli Ginzberg, The Development of Human Resources (New York: McGraw-Hill Book Company, 1966), pp. 53-54.

.57 and for career beginnings (first job) to present occupation for the U.S. population .54.[15] Thus, the immigrants undergo changes in relative status to the same extent as do Americans if the immigrant's first home job is taken as the reference point.

The correlation of the immigrant's first home job to present U.S. occupation was higher than to his last home job, contrary to what was expected. Findings of Blau and Duncan and Featherman as well as the hypothesis of Ginzberg suggest that each subsequent job further steers the individual along his occupational course and that consequently the last job should have a stronger relationship with the present job than any one of his previous jobs. For the immigrants, this hypothesis is substantiated if the last home occupation is discounted. The order of the correlations with present job by size (largest first) is first U.S. job, first home job and last home job. This violates the order of the time sequence in which these jobs were held by the immigrants.

A possible interpretation for the lack of correspondence between the temporal order of occupations and their order by magnitude of correlation is that in the act of migration the immigrants relegate themselves to jobs of lower status upon arrival. This would automatically make their occupational status more like their first job, since it is also of lower status than their last home job. This status loss is offset by the increase in earnings; the immigrants have swapped occupational status for increased earnings.

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[15] Peter M. Blau and Otis D. Duncan, The American Occupational Structure (New York: John Wiley & Sons, 1967), p. 403.

The Relationship of Educational Attainment and Certain Characteristics of Spanish-Speaking Immigrants

The focus of this study is on the education of the immigrant and its interrelationships with the other variables. A complete chapter is devoted to the relationships of education to the measurements of economic success and English proficiency evaluation. This section will offer possible interpretations for the relationships between education and the other characteristics. The discussion will be divided into three parts:

1. Demographic and quantitative characteristics -- color, order of birth, number of dependents, and temporal variables.
2. Cultural integration characteristics -- non-formal education in the U.S., community integration, and North American friends.
3. Subjective characteristics -- major problems, motives to immigrate and intentions.

Demographic and Quantitative Characteristics

The possibility that preferential treatment due to order of birth or color could have affected the immigrant's educational attainment has not been borne out by the data. It is often assumed that the less educated have more children. This assumption was not supported by the data of this study either. The effects of country of origin are not clear because of the uneven distribution of immigrants among the various countries.

Of the three temporal variables measuring age, work experience and time in the United States, only work experience is significantly correlated to educational attainment although the three variables are significantly intercorrelated. It had been expected that age and education would have had an inverse relationship since there usually is a steady climb in the mean educational attainment in a population from year to year. The younger members of the population would tend to have more education than the older. It is not readily apparent, then, why work experience, almost perfectly related with age (r = .95, see Table 4.2), is significantly and inversely correlated with education while age is not.

It is reasonable to expect that work experience would have a stronger relationship with education than age because immigrants at the same age but differing in education would also differ in work experience. One cannot work full-time and also complete as many school years as someone of the same age who is not working and is only attending school. Secondly, it should be observed that work experience is not related significantly to the occupational variables while both age and time in the United States are. This observation at first seems to add to the confusion. But it also leads to the hypothesis that the earlier arriving immigrants tended to be of a higher socioeconomic status than the more recent arrivals. As their higher status implies, they are better educated than the more recent arrivals at a given age. This is likely because there has been an expansion of the Latin American middle class and of Latin American immigration to the U.S. simultaneously.

Whether or not the earlier arrivals have a higher educational attainment than the more recent arrivals at the same age can be tested mathematically by taking the first-order correlation between educational attainment and time in the United States while partialling out age. The zero-order coefficient for educational attainment and time in the United States is .203, not significant at the .05 level. When the effects of age are partialled out, the first-order coefficient is .364, significant at the .01 level (N = 81). Hence, there is mathematical support for the explanation that the earlier arrivals have attained a higher level of education than the more recent arrivals at the same age. The technique also uncovers a significant relationship between education and age. Adjusting for the effects of time in the U.S. the first-order correlation is -.34 ($P < .01$) compared to the zero-order coefficient of -.16 ($P > .05$). Hence, education and age do relate in the anticipated and normal way.

Cultural Integration Characteristics

Many immigrants obtain English instruction in the United States through community sponsored (and sometimes government supported) educational programs. This would lead one to assume that there exists a valid relationship between non-formal education in the U.S. and English proficiency, North American friends and community integration. Even though educational attainment is antecedent to U.S. non-formal education and they both have significant correlations with English proficiency, it nevertheless cannot be assumed that educational attainment is related to English proficiency by way of U.S. non-formal education and that formal education does not have an independent influence on English proficiency. In fact, it is probably just the opposite. U.S. non-formal education is significantly correlated with English proficiency because of the common variable, educational attainment, exerting influence on both of them. This can be tested mathematically by partialling out the effects of education on the significant zero-order correlation between U.S. non-formal education and English proficiency. When this is done, the first-order coefficient becomes non-significant ($r_{12.3} = .12$, $N = 81$, $P > .05$). Furthermore, as the partialling technique indicates, U.S. non-formal education adds nothing to the magnitude of the correlation if it is included in the regression equation with educational attainment to explain the dependent variable, English proficiency. That is, the multiple correlation among educational attainment, non-formal education and English proficiency is not significantly greater than the zero-order correlation between educational attainment and English (.67 vs. .66).

In parallel fashion, applying the partial correlation technique, it can be shown that the relationship between U.S. non-formal education and North American friends loses its significance if English proficiency is held constant. Thus it is by virtue of its relationship with English proficiency, found to be spurious, that U.S. non-formal education is related to North American friends.

In sum, it is most likely that U.S. non-formal education is only significantly and truly related to the community integration index. It is disappointing to find that U.S. non-formal education does not provide an independent influence on speaking English and having American friends. It is also disheartening to find that U.S. educational programs, some of which are training programs specifically designed to upgrade the occupations of the Spanish-speaking population, do not result in higher salaries or occupational status for the immigrants.

The finding that non-formal education is significantly related to the community integration index, and it is most likely that this is the only variable with which it is truly related, becomes more telling when it is recognized that community integration is significantly correlated only with non-formal education. Many of the educational programs are specifically directed at the Spanish-speaking community. So it is understandable that those immigrants knowing the community leaders would be more likely to enter these programs. Those who had not heard of the community leaders before entering the programs would certainly have heard their names prior to leaving the program.

The proportion (71 per cent) of immigrants indicating that they have North American friends is surprising in light of the proportion (54 per cent) who were evaluated as having a poor command of English and the proportion (51 per cent) who named the English language barrier as their greatest problem. It is likely that many of the "friends" are actually acquaintances and some are probably community workers and religious workers.

Subjective Characteristics

Although the English language was cited as the greatest problem and the second largest group said they had no problems, adequate housing and job dissatisfaction were the next two most common problems named. The mean education of those naming job dissatisfaction as their greatest problem is significantly greater than those naming the language barrier (see above for statistics). This can be explained by the obvious tendency of the better educated to know English better and have higher expectations in the job market.

It is worth mentioning that the politically motivated also have a higher mean education than the economically motivated. It is very probable that the group of immigrants who are dissatisfied with their jobs are also the ones who came to the United States for political reasons. It was expected that this same group might coincide with those desiring to return to their country instead of staying in the United States. This cannot be shown, however, by the means test since the mean education for the group desiring to return is not significantly higher than the group intending to remain (see above for statistics). If the political situation which motivated their migration still exists, this would explain the lack of return migration. In summary, immigrants with higher education are dissatisfied with their jobs and were politically motivated to migrate. They intend to remain, however, perhaps because the political situation for many is still untenable.

The majority of immigrants said they came to the United States for economic reasons. This seems to be an accurate assessment of differing economic opportunities on their part since they earn on the average $50 more a week in the U.S. than they did in their countries. An alternative explanation might refer to a self-fulfilling prophecy hypothesis as the crucial factor in the immigrant's higher incomes. The immigrants have heard that one is able to earn more in the U.S. and they believe it. They are therefore more likely to have higher motivation in their jobs in the U.S. than they did in their home countries.

Comparison of Sample Members to Other Populations

A comparison of the sample with other populations is undertaken for two reasons. First, such a comparison makes the sample data more meaningful by placing it in a demographic perspective. The sample can be evaluated as relatively high or low in a characteristic. The divergence of the sample from non-immigrant and non-Spanish-speaking population helps in the development of an over-all picture of the immigrants. Divergencies between the sample immigrants and other Spanish-speaking or immigrant populations call for explanations as to why these differences or similarities should occur. This leads to the second reason. Some of these explanations will probably rest on sample bias. Thus, the comparison will further define the limitations and strengths of the data in applying its generalizations to other populations.

It is possible to compare the sample data with analogous immigrant populations on three characteristics. The three characteristics are occupational distribution of last home occupation, intentions, and country of origin. The sample has an occupational distribution (last home occupation) not significantly different from Latin American immigrants arriving in the United States in 1971. The two groups differ in that the sample includes only males in the District of Columbia while the Latin American immigrant population includes males and females destined for all points in the United States. At the level at which the comparison was made (see above for statistics), i.e., combined broad groupings of the Census Bureau's least detailed occupational classification scheme, the sample seems to well represent the occupational distribution of the larger population of immigrants. This is an encouraging finding since the major part of the study concerns itself with the occupational status, income and education of immigrants, variables which were found to be significantly interrelated.

The second comparable characteristic is the immigrant's intentions in regard to remaining. The sample members' intentions were not significantly different from student immigrants' intentions, hence the two samples are similarly distributed on this variable. However, the sample and Peruvian immigrant students were found not to be similarly distributed, probably because the Peruvian students did not intend to immigrate when they applied for their immigrant visas. Myers explains that it was easy to obtain immigrant visas before 1965 (the sample was drawn in the U.S. in 1966 and most had arrived prior to 1965). Students would be able to secure employment more easily with immigrant visas than with student visas and they would not be required to have been accepted by a university before coming to the States.[16]

The third characteristic is the country of origin. The sample immigrants were found to be significantly different in country of origin from permanent residents reporting in the annual address report for 1972 in the District (see above for statistics). "Permanent resident" is also the legal status of the sample; consequently, the two groups differ only in that the alien address includes women and children of all ages. The sample has a larger proportion of Central American and Mexican immigrants and fewer South American immigrants. There are three possible explanations. It could be that Central Americans and Mexicans have a propensity for national or ethnic solidarity and, thus, have chosen to settle in the more concentrated areas of Spanish-speaking people living in the District. The sample was drawn primarily from these areas Or it could be that Central American people, especially the people from El Salvador who are represented in the sample much more than expected by their proportion in the annual address report or the D. C. Census, have more open personalities. This "openness" would make them more accessible to interviewing.

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[16] Meyers, op. cit., p. 254.

A third possible explanation is that there are more immigrants in the District from Central America than the other sources have accounted for. Nevertheless, the sample probably does underrepresent immigrants from South America and overrepresents those from Central America. This finding will undercut the conclusions of the study only if country of origin is related to the variables under focus. The finding of a non-significant difference between occupational distributions would seem to indicate that country of origin is not related to occupational distribution.

The sample immigrants were compared to the foreign born population on two characteristics. The foreign born include naturalized citizens and aliens. The proportion of sample immigrants arriving in the last decade was found not to be significantly different from the proportion of foreign born aliens from all countries. The sample immigrants are significantly different in color than the foreign born from Spanish-speaking countries in the District. "Color" here refers to white (including mestizo or brown) and non-white. The bias in the country of origin, favoring the immigrants from El Salvador, most likely reflects itself in this difference in color. Salvadorians are predominantly "white."

In the comparisons of the sample with the D. C. populations, it was found that the sample resembles the black population more than the Spanish language population on the characteristics of dependent children, income, and education. In general, the Spanish language population is more similar to the white or total population than to the sample and the sample is more similar to the black population. There are several reasons why this is likely to result. The Spanish language population is composed of Cuban refugees, Puerto Ricans, diplomats, international visa holders and natural and naturalized citizens in addition to immigrants. The sub-populations other than immigrants have advantages inherent in their population membership that immigrants do not have. The Cuban refugees tend to be of the middle and upper classes and receive special treatment by the U.S. government. Diplomats and international visa holders are the elite of their countries and have high-paying jobs. Natural (e.g., Puerto Ricans) or naturalized citizens have the advantage of being eligible to work for the government, the District's biggest industry, while immigrants are barred from government employment. It is estimated that Spanish-speaking immigrants represent a little over one quarter of the Spanish language population. Thus, the characteristics of the immigrants do not characterize the Spanish-language population.

While some of the sub-populations of the Spanish language population would lean toward having large proportions in the upper middle and upper class, the immigrants in the sample are mostly working and lower middle class.

Hence, it is logical that the sample would resemble the black population since they are in comparatively equal positions in the U.S. socioeconomic stratification.

A result of the resemblance of the sample and black population is that in the District the majority of immigrants and blacks live in the inner city and reflect those characteristics associated with the urban ghetto. The whites and the Spanish-speaking population, generally of higher socioeconomic standings, would reside in the more affluent sections of the city.

The sample also is more similar to the black population than the Spanish language population in the number of children. The sample immigrants have more children than the Spanish language population in general. A plausible explanation for this could be that the Spanish language population in general includes citizens and naturalized foreign born. They have been in the United States longer and have assimilated the cultural values to a greater degree than the immigrants. The Spanish language population in general would more likely have values more closely related to the U.S. culture, which discourages large families. In Latin American countries, large families are admired and this is reflected in the family size of the immigrants.

Summary

The results in this chpater were interpreted in three sections: the characteristics of educational attainment, occupation and income, the relationships between certain characteristics of Spanish-speaking immigrants and educational attainment, and the comparison of the characteristics between the sample and related populations. The results reveal that the immigrants are educationally disadvantaged in comparison with even the most deprived population in the District but that from the perspective of their home countries they are educationally advantaged. The immigrants are employed primarily in blue collar occupations. In the U.S. they also have a large proportion in the service occupations which was negligible in their own countries. The loss of socioeconomic status upon immigration is significant but probably does not represent unsettling dislocations, except for the high school graduate, since it usually involves a move within the blue collar category or from the blue collar to the service category. The effects of career beginnings were found to be stable across international boundaries. The "irreversibility" of occupational determination can be distorted by the prospects of monetary compensation.

The argument was made that the educational attainment and occupational status of the earlier-arriving immigrants were higher relative to age than those of the more recent arrivals. Evidence was presented that the immigrant's educational attainment exerts an independent influence on his English proficiency and his acquaintance with North Americans and that the relationshp between non-formal education and these variables is spurious. There was evidence establishing that the U.S. non-formal education of the immigrant and his knowledge of community organizations and leaders are associated by virtue of the community leaders' activities in connection with many of the educational programs for the Spanish-speaking community.

The results support the proposition that immigrants citing job dissatisfaction as their greatest problem tend to have a higher level of educational attainment than those citing English proficiency. Similarly, immigrants citing political reasons as their motive to immigrate tend to have more education than those naming economic reasons. Immigrants do not differ in educational attainment, however, according to their intentions to remain or leave the U.S. The immigrant's expectations of earning more in the U.S. are confirmed in that they earn an additional $50 a week.

In the comparison of the sample immigrants with related populations on certain characteristics, the sample compared well on some characteristics with other immigrant populations but resembled the black population more than the Spanish language population. The characteristics of last home occupation and intentions in regard to remaining in the U.S. are not significantly different from other immigrant populations. The distribution of countries of origin is different, however. The sample immigrants have a greater proportion of whites than the Spanish language foreign born and have arrived in the last decade to the same extent as foreign born aliens in the District of Columbia. The comparison of occupational distributions bolsters the validity of interpretations regarding the findings for education and economic success.

Although the sample is a sub-population of the Spanish language population, the differences between these two groups are greater than between the sample and the black population in the District. The sample shows the same socioeconomic composition as the black population while the Spanish language population as a whole is very similar to the white District population.

CHAPTER V

EDUCATION AND ECONOMIC SUCCESS

The second objective of the study is to determine the extent to which education is an indicator of economic success for the immigrants. Education is measured by the number of grades completed. Economic success is reflected by the immigrant's occupational status based on Duncan's socioeconomic index of occupations and weekly earnings. Each of these components of economic success will be analyzed separately with educational attainment. The fundamental question of this section is: Does the education obtained in a foreign country help an immigrant in getting a job and earning a living in the United States?

The procedure here will be to first examine the zero-order correlations among the variables involved. Then the analysis will be refined by isolating the effects of extraneous and intermediate variables that may influence the zero-order correlations. The data will also be examined for curvilinear relationships and for the specific educational subgroup which has the most influence on the association of education with occupational status and weekly earnings.

Also, in this section, the relationships between educational attainment and last home occupation and between educational attainment and English proficiency will be examined since these two factors were found in other studies to be important for economic success.

Findings

Educational Attainment and Present Occupational Status

It is hypothesized that the correlation coefficient for educational attainment and present occupational status is significant at the .05 level of confidence. Table 5.1 is a matrix of the correlation coefficients for educational attainment and the four variables of occupational status. The correlation between educational attainment and present U.S. occupation is .50 which is significant at the .01 level of confidence (N =81). The null hypothesis of no significant correlation can be rejected. All the correlation coefficients for educational attainment and the measures of occupational status are significant at the .01 level of confidence (N = 81, see Table 5.1).

An effort was made to further examine the relationship between educational attainment and occupational status. Four new variables were created by assigning sample members to the following educational levels, grades 1-5, 6-11, 12-15 and 16-18. For each of the four levels the members were classified as zero if they did not belong and one if they did belong. This procedure produced "dummy" variables which can be correlated by the product-moment method with other variables, see Table 5.2. All of the "dummy" variables are significantly correlated at the .05 level of confidence with the occupational status variable. There are no significant differences among the magnitudes of the coefficients (ignoring direction since the relative strength is the aspect of importance). Thus, the significant correlation between education and occupational status remains even when the educational variable is decomposed into four dummy variables.

The comparatively large (although not significantly larger) correlation coefficient between occupational status and the group with 16-18 years of schooling vis-a-vis the other groups suggests the possibility that the relationship may not be best described by a linear model. Table 5.3 contains the results of the test for non-linearity of the relationship between educational attainment and present occupational status. An analysis of variance (column one

TABLE 5.1

CORRELATIONS AMONG EDUCATION AND ECONOMIC VARIABLES[a]

	1	2	3	4	5	6	7	8
1.Education	1.00							
2.First home occupation	.62	1.00						
3.Last home occupation	.55	.69	1.00					
4.First U.S. occupation	.35	.48	.44	1.00				
5.Present U.S. occupation	.50	.57	.44	.71	1.00			
6.Present U.S. salary	.28*	.39	.30	.54	.59	1.00		
7.Work experience(years)	-.30	-.10	.02	.14	.09	.00	1.00	
8.Time in the U.S.	.20	.23	.18	.36	.40	.16	.46	1.00
	1	2	3	4	5	6	7	8

Levels of significance

r = .22 at the .05 level of probability
r = .28 at the .01 level of probability

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*Significant at the .05 level rather than the .01 level when carried out to the third decimal place.

TABLE 5.2

CORRELATIONAL MATRIX OF EDUCATIONAL LEVELS AS DUMMY VARIABLES, OCCUPATIONAL STATUS, AND SALARY

	1	2	3	4	5	6
1.Education, 1-5[a]	1.00					
2.Education, 6-11	-.56	1.00				
3.Education, 12-15	-.23	-.48	1.00			
4.Education, 16-18	-.16	-.34	-.13	1.00		
5.Present U.S. occupation	-.22	-.25	.27	.41	1.00	
6.Present U.S. salary	-.13	-.10	.01	.34	.59	1.00

Levels of significance

r = .22 at the .05 level
r = .28 at the .01 level
N = 81 (Missing data is accounted for by estimates based on regression equations and calculations from related sample data). One case is omitted because it lacked last home occupation.

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[a] Grades one through five, zero grades were converted to one.

TABLE 5.3
TESTS FOR NON-LINEAR ASSOCIATIONS BETWEEN EDUCATIONAL ATTAINMENT AND ECONOMIC VARIABLES

Variables	ANOVA F[a] (1)	E^2 (2)	r^2 (3)	Non-Linearity F[b] (4)	Unbiased E^2 (5)
Education and present occupation	4.57**	.55	.25	2.61**	.44
Education and last home occupation	2.92**	.44	.31	.95[c]	.08
Education and present earnings	4.97**	.57	.08	4.56**	.46

**Significant at the .01 level of confidence.

[a] Degrees of freedom, 17, 63. There are eighteen categories of education (one for each grade, zero is coded as one).

[b] $F_{k-2,N-k} = \frac{(E^2-r^2)(N-k)}{(1-E^2)(k-2)}$, Degrees of freedom, 16,63 (The formula is taken from H. Blalock, Social Statistics, p. 412).

[c] Not significant.

of Table 5.3) was performed on educational attainment and present occupational status. Since the F value of 4.57 was significant the correlation ratio, Eta, (also denoted as "E"), was computed (the square of Eta is given in column two). An F test was then done to determine if the additional amount of variance explained by $E^2 - r^2$ is significant (column 4). Finally the unbiased Eta^2 (column 5) was calculated to estimate the actual degree of correlation.

The unbiased Eta is .66 compared to the correlation coefficient of .50 for educational attainment and present occupational status. The test for non-linearity was significant at the .01 level of confidence, indicating that .66 (the unbiased Eta) is a better estimate of the association between the two variables under study than .50 (the correlation coefficient).

Another approach in the analysis of the relationship between educational attainment and present occupational status is to consider the effects of other variables on the correlation. Table 5.4 presents the results of partialling out intervening temporal variables from the correlation. The zero-order coefficient for educational attainment and present occupational status is .50; when work experience in years and time in the United States are partialled out separately, the coefficient becomes .56 and .47 respectively (coefficients are rounded off in the text, see Table 5.4). These first-order coefficients are significant at the .01 level. When the effects of work experience and time in the U.S. are removed simultaneously, the second-order coefficient becomes .47, still significant at the .01 level. Substituting age for work experience makes no appreciable difference in the results.

The partialling technique was also applied to assess the effects of likely mediating intervening variables: the immigrant's first U.S. occupation, first and last home occupational status and father's occupational status. The

TABLE 5.4

PARTIAL CORRELATIONS OF EDUCATION AND ECONOMIC VARIABLES

Zero-order Correlation Coefficient Variables	r_{12}	First-order Correlation Coefficient Variables	$r_{12.3}$	Second-order Correlation Coefficient Variables	$r_{12.34}$
PUO, Ed	.504**	PUO,Ed·WEx	.559**	PUO,Ed·WEx,Ti	.472**
		PUO,Ed·Ag	.55**		
		PUO,Ed·Ti	.471**	PUO,Ed·Ag,Ti	.49**
		PUO,Ed·LHO	.351**	PUO,Ed·LHO,Dad	.398**
		PUO,Ed·Dad	.515**		
		PUO,Ed·FHO	.229	PUO,Ed·LHO,FHO	.224
		PUO,Ed·FUO	.412**		
PS,Ed	.281*	PS,Ed·WEX	.296*	PS,Ed.WEx,Ti	.249
		PS,Ed·Ag	.294*	PS,Ed·Ag,Ti	.259
		PS,Ed·Ti	.257		
		PS,Ed·PUO	.026	PS,Ed·PUO,LHO	.057
		PS,Ed·LHO	.144		
		PS,Ed·FHO	.053		

*Significant at the .05 level of probability.
**Significant at the .01 level of probability.

Key:
Ed - Education
PS - Present salary
WEx - Work experience (years)
Ti - Time in the U.S.
Ag - Age
PUO - Present U.S. occupation
LHO - Last home occupation
FHO - First home occupation
FUO - First U.S. occupation

first-order coefficient for educational attainment and present occupational status is still significant at the .01 level when the immigrant's last home or father's occupational level is partialled out but it ceases to be significant when the immigrant's first home occupational status is the partialled variable (see Table 5.4). Removing the effects of last home occupation and father's occupation simultaneously yields a second-order partial correlation of .40 (significant at the .01 level). The same procedure for first and last home occupation results in a coefficient of .22 (not significant) for educational attainment and present occupational status.

Of the five variables partialled out of the original relationship only one by itself, first home occupational status, caused the relationship to lose significance by being "held constant."

Educational Attainment and Weekly Earnings

In this study, economic success is defined as the immigrant's occupational status and earnings (salary or wage). It was hypothesized that the educational attainment and the present weekly earnings of the immigrant in the United States would correlate significantly. The zero-order coefficient for these two variables is .28 which is significant at the .05 confidence level (see Table 5.1) and hence the null hypothesis of no significant correlation can be rejected. The correlation coefficient was calculated for the immigrant's first U.S. earnings (but not last home earnings) and educational attainment and it was found not to be significant (see Table 4.2).

The immigrant's present salary was analyzed in the same way as his present occupational status. Using dummy variables for four levels of educational attainment, the correlation between educational attainment and present earnings is significant only for the 16-18 educational level (at the .01 level of significance, see Table 5.2). Taking the cue from this finding that the relationship may be best described by a non-linear model, an F-test was applied. Table 5.3 presents the test for non-linear associations showing that Eta^2 is significantly different from r^2 and therefore the relationship is most likely curvilinear. The unbiased E is .68, compared to the correlation coefficient of .28.

The partial correlation technique indicates which variables intervene in the relationship between educational attainment and earnings. Holding fixed the following variables results in non-significant first-order correlations: time in the U.S., first home occupational status, last home occupation, and present occupational status (see Table 5.4). Eliminating the effects of work experience hardly changes the zero-order correlation. Present and first home occupational status' effects are so great on the education-earnings correlation that by holding them constant one at a time the first-order coefficients are practically zero. Work experience in years and time in the United States are not significantly correlated with earnings (see Table 5.1). Substituting age for work experience makes no appreciable difference in the results.

Educational Attainment and Home Occupations

It was hypothesized that the immigrant's educational attainment and his last home occupational status would be significantly correlated. This hypothesis was established because the review of the literature found evidence that the immigrant's former occupation in his native country could be a significant indicator of his occupation in the receiving country. It is also important to demonstrate that educational attainment is significantly related to the immigrant's home occupation if educational attainment is to be used later in the study as a measure of utilization of immigrant manpower.

The correlation coefficient of educational attainment to first and to last home occupational status are .62 and .55 respectively, which are significant at the .01 level (see Table 5.1). The null hypothesis of no significant correlation must be rejected in both instances.

The assumption that the immigrant's first and last home occupations are significant indicators of present occupation can be tested by positing a null hypothesis of no significant correlation at the .05 level. The coefficient for the relationship of present occupation with first and last home jobs are .57 and .44 respectively, which are significant at the .01 level of confidence. Thus, the null hypothesis can be rejected. The coefficient (.57) for the immigrant's first home occupation and present occupation is not significantly larger than the coefficient (.44) for last home occupation and present occupation ($t = 1.78$, $P > .05$, $df = 78$).

Educational Attainment and English Proficiency

As with the immigrant's last home occupation, English proficiency was also cited in the literature as an important factor of economic integration in the host country. It is assumed that English proficiency is significantly correlated with present occupation and present salary. If educational attainment is a significant predictor of English proficiency,then it would aid in explaining how education influences the economic success of immigrants. Hence, it was hypothesized that educational attainment and English proficiency would have a significant correlation coefficient at the .05 level of confidence. The coefficient is .66, significant beyond the .01 level (see Table 5.5) and, therefore, the null hypothesis of no significant correlation is rejected.

TABLE 5.5

CORRELATIONAL MATRIX OF ENGLISH PROFICIENCY AND OTHER SELECTED VARIABLES

	1	2	3	4	5	6	7
1.English	1.00						
2.Education	.66	1.00					
3.Present U.S. occupation	.46	.50	1.00				
4.Present U.S. salary	.19	.28	.59	1.00			
5.Time	.30	.20	.40	.16	1.00		
6.Age	-.22	-.16	.21	.06	.56	1.00	
7.U.S. training	.34	.30	.13	-.05	-.01	-.32	1.00

Levels of Significance

r = .22 at the .05 level
r = .28 at the .01 level
N = 81 (Missing data is accounted for by regression estimates and calculated from related sample data)

The assumption that there is a significant correlation for English proficiency with present occupation and with present salary are also tested in Table 5.5. The coefficients for these relationships are .46 and .19 respectively. The null hypothesis of no correlation for English proficiency and present occupation can be rejected at the .01 level while the null hypothesis must be accepted for the relationship between English proficiency and present salary.

The correlation between educational attainment and English proficiency was analyzed with respect to the effects of possible intervening variables. It is reasonable to assume that the time that the immigrant has spent in the United States and his age will affect his English-speaking ability. When these variables are partialled out individually, the coefficient for educational attainment and English proficiency changes from .66 to .65 for both variables (see Table 5.6). When both intervening variables are partialled out simultaneously the coefficient drops from .66 to .59. The original zero-order coefficient is not improved upon by partialling out these possible intervening variables.

It is interesting to note that the zero-order coefficient for English proficiency and time in the U.S. is .30 and increases to .52 when age is partialled out (see Table 5.6). Nevertheless, the correlation between educational attainment and English proficiency is the highest zero-order coefficient in the table and remains higher than the other potentially important predictors of English proficiency, i.e., age and time in the U.S., even when the latter are calculated at the second-order level.

English proficiency and the variable representing non-formal education in the United States are significantly correlated at the .01 level. The results of first-order

TABLE 5.6

PARTIAL CORRELATIONS FOR ENGLISH PROFICIENCY, EDUCATION AND SELECTED VARIABLES

Zero-order Correlation Coefficient Variables	r_{12}	First-order Correlation Coefficient Variables	$r_{12.3}$	Second-order Correlation Coefficient Variables	$r_{12.34}$
Eng, Ed	.664**	Eng,Ed·Age	.653**	Eng,Ed·Age,Ti	.586**
		Eng,Ed·Ti	.646**		
		Eng,Ed·UNE	.622**		
Eng,Ti	.296**	Eng,Ti·Age	.516**		
Eng,Age	-.22*	Eng,Age·Ti	-.49**		
Eng,UNE	.34**	Eng,UNE·Ed	.198		

*Significant at the .05 level of probability.
**Significant at the .01 level of probability.

Key: Ed - Educational attainment
Eng - English proficiency
Ti - Time in the U.S.
UNE - U.S. non-formal education

correlations involving these variables help in the understanding of whether or not the zero-order correlation is due to the significant relationship between non-formal U.S. education and educational attainment. The simple correlation between English proficiency and U.S. training is .34, significant at the .01 level. When the effects of educational attainment are partialled out, the first-order coefficient is .20, not significant at the .05 level (see Table 5.6). Thus it appears that the relationship between English proficiency and non-formal education in the U.S. is a result of the effects of educational attainment.

The correlations of English proficiency to education, length of time in the United States, and age were significant. Testing for significant differences between the means of these variables in each of the four English proficiency ratings pinpoints the source of the correlation. In Table 5.7 the mean education for each rating is presented. Except for ratings "one" and "two," all the means are significantly different. Mean time in the United States is significantly different for the sample members with ratings of "one" and "three," and "one" and "four " (see Table 5.8). Similarly, only the sample members with ratings of "one" and "three" are significantly different in age (see Table 5.9).

Discussion

The findings support the research hypotheses which undergird the thesis that educational attainment in home country influences the immigrant's U.S. economic success.The direct relationships between education and the measures of economic success were analyzed to learn more about their nature. Also the indirect relationships were explored by testing the effects of education and intermediate variables on each other. The interpretations of the findings generated from the analysis of the direct and indirect relation-

TABLE 5.7
MEAN EDUCATION ACCORDING TO ENGLISH PROFICIENCY RATING

English Proficiency Rating	Mean Education	Standard Deviation	Number of Cases
1	5.8	3.3	29
2	6.8	2.2	15
3	10.6	3.3	25
4	13.2	2.6	13

t-Test[a] Results for the Difference between the Means:

Ratings	df	t	Confidence Level
1 and 2	42	-1.03	Not Significant
1 and 3	52	-5.23	.01
1 and 4	40	-6.98	.01
2 and 3	38	-3.86	.01
2 and 4	26	-6.80	.01
3 and 4	36	-2.40	.05

[a] The difference-between-the-variance tests for the variances of education by ratings were not significant in any case.

TABLE 5.8

MEAN TIME IN THE UNITED STATES ACCORDING TO ENGLISH PROFICIENCY RATINGS

English Proficiency Rating	Mean Time in U. S.	Standard Deviation	Number of Cases
1	3.6	1.9	29
2	5.3	3.0	15
3	6.4	5.3	25
4	6.6	3.7	13

t-Test Results for the Difference between the Means:

Ratings	df	t	Confidence Level
1 and 2	42	-1.45	Not Significant
1 and 3[a]	27	-2.46	.05
1 and 4[b]	12	-2.66	.05
1 and 3	38	-1.46	Not Significant

[a] The t-test for means with significantly different variances was applied since the difference-between-the-variance test was significant, $F_{24,28} = 7.83$, $P<.01$.

[b] See note a, $F_{12,28} = 3.97$, $P<.01$.

TABLE 5.9
MEAN AGE ACCORDING TO ENGLISH PROFICIENCY RATINGS

English Proficiency Rating	Mean Age	Standard Deviation	Number of Cases
1	40.1	9.7	29
2	35.5	6.5	15
3	34.4	11.8	25
4	35.6	12.2	13

t-Test Results for the Difference between the Means:

Ratings	df	t	Confidence Level
1 and 2	42	-1.77	Not Significant
1 and 3	52	-2.07	.05
1 and 4	40	-1.39	Not Significant

ships lead to a more comprehensive understanding of the nature of the relationship between education and economic success of immigrants.

The Direct Relationship

The significant correlation between education and occupational status is fairly even along the distribution while the correlation between education and earnings is probably the result of a few extreme cases near the upper limit of the distribution. Among the correlations of the dummy variables only the 16-18 educational level exhibits a significant correlation with earnings. Hence, the overall significant correlation between education and earnings for the entire sample using continuous interval variables for education is probably a result of the strong association at the upper end of the distribution. This probably holds true for the non-linear model as well since the use of the dummy variables cancels out the distortions of linearity among the four levels of education as measured.

It is more difficult to characterize the nature of the education-occupation correlation. The correlations between education as dummy variables and present occupation are all significant and there are no significant differences between the coefficients, if the direction of the relationship is ignored. The non-linear model for the relationship explains 19 per cent more of the variation in occupational status than the linear model.

The effects of the temporal variables of time in the U.S. and work experience in years on the education-economic success relationship are important to consider because they potentially interrelate with the dependent and independent variables. Their effects could easily cause distortions in the analysis of the direct relationship. These variables have a natural association with the immigrant's educational attainment and the measures of economic success.

In most populations there is a gradual increase in mean education from one age cohort to the next. Also it is expected that work experience will reflect increased ability in the worker in terms of skills and work orientation in general. Time in the U.S. should also reflect increased occupational status and earnings as the immigrant becomes accustomed to the language and the way of life in the receiving country. The findings do not support these assumptions across the board.

Eliminating the effects of work experience causes the correlation coefficient between education and occupation to increase slightly. Work experience, then, does not represent increased ability for the sample as a whole but rather reflects its negative correlation with education and its almost zero correlation with occupation. It does not appear that work experience is an occupational advantage for the immigrants. Age affects the education-occupation relationship in the same way that work experience does.

Partialling out time in the United States was expected to raise the coefficients between education and the economic success variables. The opposite occurred, but not to a significant degree. This finding raises questions about the assumption that immigrant's time in the U.S. helps him secure a better job or higher salary. Age and education correlate with time in the U.S. which means that the earlier immigrants were better educated for their age than the more recent arrivals (see Chapter IV). Therefore, the effects of time in the U.S. on the correlation between education and the economic success variables are more of a result of the relationship between time in the U.S. and age and education rather than any validation of the previous assumption about the advantages of time. This can be established mathematically by partialling out the effects of education and age from the time-occupation correlation. The coefficient drops from a significant .40 to a second-order correlation of .23, not significant at the .05 level. The zero-order coefficient between earnings and time in the U.S. is not significant.

Indirect Relationship

There is evidence that the influence of education on the immigrant's present earnings is mediated by his present and former occupations and that the immigrant's first occupation can account for all of the influence of education on his present earnings and occupation. The partialling technique reveals that education has no impact on the immigrant's present salary independent of his occupations. Considering the sequence of the occupations, it appears that the immigrant's first occupation is the primary link between educational attainment and his present occupation in the U.S. This is believed to be the case because the first home occupation is the only occupational variable which, by itself, eliminates the significant correlation between education and present occupation.

In short, education has no independent influence on either the immigrant's present occupation or earnings when also considering the effects of his first home occupation. His first home occupation is the primary vehicle for transmitting the influence of educational attainment to the measures of economic success.

English proficiency plays a part also in determining the immigrant's occupational status. It is not significantly correlated with earnings, however. Apparently there are some immigrants in fairly high status jobs who speak English well but are not compensated to a greater extent than other immigrants who speak English less well and are in lower status jobs.

English proficiency does not have any influence on occupation independent of educational attainment. The partialling technique indicates that when education is held constant, the significant correlation between English and occupation disappears. Although English is naturally an important factor in economic success it does not have any effect independent of the educational attainment of the immigrant.

An analysis of the English proficiency ratings shows that there is no significant difference in the mean education of ratings "one" and "two," but there are significant differences between the other ratings. Hence, the strong correlation between education and English proficiency is continuous starting from rating "two" through rating "four." The correlations of English proficiency to time in the U.S. and to age are not as uniform throughout the distribution. There are no significant differences in the mean time in the U.S. among ratings "two," "three" and "four," averaging from five to seven years in the United States. However, immigrants with an English proficiency rating of "one" have a mean time in the U.S. of 3.6 years, significantly different from ratings "three" and "four." Therefore, the correlation between English proficiency and time in the U.S. is attributed to the spread between rating "one" and ratings "three" and "four." In regard to the correlation between English proficiency and age, the significant difference in mean age between ratings "one" and "three" appear to be the source of their association.

Time in the U.S. and age are more important factors in determining English proficiency than the treatment of the zero-order correlations and the means seem to indicate. This is because time in the U.S. and age are significantly correlated at .56 and, unless one variable is held constant in the analysis, their individual impact is diminished by the effects of the other. The partial correlation, taking age as the constant variable, shows that time in the U.S. explains statistically 25 per cent of the variation in English proficiency. In parallel fashion, age explains the same amount of variation in English proficiency when time in the U.S. is the variable held constant.

Contrastive Findings

In a study of the economic integration of immigrants in British industry, Patterson concluded that the immigrant's technical skill is probably the most important factor. If the technical skill is reflected in the immigrant's previous occupations and level of education it is possible to support this thesis with the findings of this study. Educational attainment and occupational status also indicate levels of socioeconomic integration. What Patterson did not uncover but was found in this study is that the immigrant's first home occupation is as influential as his last occupation in contributing to his economic success and that it completely mediates the effects of his education.

English proficiency was also found to be important in Patterson's study. The finding in this study substantiates that hypothesis but also reveals that English proficiency does not overcompensate for the lack of those qualities associated with educational attainment.

The correlation between education and present occupation and earnings can be compared for the sample and the population of the United States. Jencks et al. report that the education-occupation correlation is .61 and the education-income correlation is .33 for native white non-farm males.[1] For the sample these coefficients are .50 and .28, respectively. The differences between the sample and the population correlations are not significant.[2] Immigrants educated in their home countries display the same education-economic success correlations relative to each other as do the members of the U.S. population relative to their own group. But this does not imply that the immigrant's education places him at the same point in the occupational status distribution as the native worker, which is the topic of the next chapter.

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[1] Christopher Jencks, et al., Equality (New York: Basic Books, 1972), p. 322.

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[2] The two confidence limits for sample's education-occupation correlation are .32 to .65 and for the education-salary correlation are .07 to .47 at the .95 level of probability.

CHAPTER VI

IMMIGRANT MANPOWER UTILIZATION

It is usually assumed that immigrant manpower is not utilized to its fullest extent. There are so many obstacles that hobble immigrants that this assumption is usually taken at face value. Immigrants, in order to use their abilities to the fullest, must overcome the language barrier, make social adjustments, become accustomed to changes in climate, adapt their skills, contend with employer bias, etc. It is logical to expect underutilization.

Underutilization of manpower can be defined in terms of the worker's occupational experience, his education and his incidence of unemployment. If the skills required for a man's present job are less complicated than those of his previous job or if his authority and responsibility are diminished, he is underemployed. Similarly, if a worker's education is significantly higher than the average educational attainment for that occupation, he is being underutilized. And even more obviously, if an able-bodied man who wants to work is not employed, he is considered unemployed and, therefore, underutilized manpower.

This latter condition was not found to be a problem of the immigrants in the sample. None were unemployed at the time of the survey. Also the question used to ascertain this problem actually measures the longest duration of unemployment and nothing more. This turned out to average two months. Unemployment was not mentioned as a problem by the immigrants. They gave the investigator the impression that they are job hustlers willing to undertake any kind of employment rather than remain idle. Therefore, this aspect of underutilization will not be dealt with further.

Findings

Occupational Underutilization

To ascertain whether or not immigrants are underutilized in terms of their previous occupational status, the research design calls for testing the hypothesis that the immigrant's present occupational status (in the United States) is significantly different from his last home occupational status. The previous finding in Chapter V that last home occupation correlated significantly with present occupation does not necessarily negate the hypothesis since the correlation technique relies on relative distance rather than absolute. That is, if native and U.S. occupational distributions are very different but nevertheless immigrants retain their relative positions, a significant correlation would be obtained.

In order to determine if this correlation reflects equivalent occupational status or relative occupational status the means for the two occupational distributions were compared. Table 4.5 presents the difference of the means test for correlated data. The means for last home occupational status and present occupational status are 38.6 and 23.4 respectively. The difference between these means is significant which suggests that the distributions are not equivalent. Further, a chi-square test of unequal distribution was found significant (see Table 6.1) also providing evidence that the occupational distributions are not the same. Thus, the null hypothesis, which states that the immigrant's native and U.S. occupations are not significantly different, is rejected.

Although the immigrant's last home occupational status and present occupational status are significantly correlated, the means of the distributions are significantly different as are the two distributions when tested by means of the chi-square statistic. The direction of

TABLE 6.1
NATIVE AND PRESENT U.S. OCCUPATIONS OF THE SAMPLE

Occupational Category	Native Occupation	Present Occupation	Z
Professionals and Managers	20	7	4.91**
Sales and Clerical	11	7	1.51
Blue Collar[a]	41	30	2.01*
Service and Laborers	9	37	-4.60**
Totals	81	81	

Chi-square = 51.65 P<.01 df = 3
*Significant at the .05 confidence level
**Significant at the .01 confidence level

Note: The number of cases in the present occupatioal categories were used as expected frequencies in calculating the chi-square and Z values. This is the "goodness of fit" application of the chi-square.

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[a] Operatives and craftsmen

this change in occupational status appears to be downward since the mean for present occupational status is significantly lower than last home occupational status. Also an examination of the Z values for each row in Table 6.1, which categorized the immigrants in combined occupational groupings, reveals that a large number of immigrants moved into the service and laborer occupations and out of the professional-managerial and operatives-crafts occupations. The Z value for the sales and clerical occupations is not significant which indicates that there were no important changes in these occupations.

Educational Underutilization

The hypothesis to test the assertion that immigrants are underutilized in regard to their educational attainment holds that immigrants and non-immigrants in the same occupational categories will have significant differences in their education. The D. C. population statistics are actually estimates calculated by assuming that the population in each educational category used by the Census Bureau are evenly distributed among the grades contained in the category. This was done for three populations in the District of Columbia, the total population, the black, and the Spanish language population (see Table 6.2).

The tests for significant differences were carried out only on the total population (see Table 6.3). The chi-square was calculated by squaring the Z values and adding them. The chi-square is significant at the .01 level of confidence. The Z value is significantly different for four of the six occupational categories but in each instance the mean for the D. C. population is higher than the mean for the sample. Although the null hypotheses can be rejected for these four categories, the direction of difference is opposite to what was expected. Therefore,

TABLE 6.2

COMPARISON OF SAMPLE AND D. C. POPULATIONS BY OCCUPATIONAL CATEGORIES[a], MEAN AND NUMBER OF CASES FOR MALES

		D.C. Population[b]	Black[b]	Spanish Language[b]	Sample
Professional	Mean	15.4	14.2	15.5	10.8
	Number of Cases	33420	11813	967	4
Managers		13.8	11.9	15.4	13.0
		15335	5388	332	3
Clerical		11.9	11.5	13.1	11.0
		27257	20408	491	7
Craftsman		9.5	9.4	10.4	10.0
		23360	18132	428	24
Operatives, Non-transport		9.3	9.3	12.1	5.0
		7939	6981	72	4
Operatives, Transport		9.3	9.3	9.6	8.3
		15025	13799	197	3
Laborers		8.3	8.2	9.1	4.2
		14435	13621	138	9
Service, Except Private		9.4	9.3	10.2	8.0
		28082	23661	656	28

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[a] These occupational categories are omitted because of the lack of cases in the samples: Sales, Farmers, Farm Laborers, and Private Household Workers.

[b] Calculated from Table 179. Detailed Characteristics District of Columbia, 1970. Means are estimates derived by assuming that the number in an educational category are evenly distributed among the grades in that category.

TABLE 6.3
MEAN EDUCATION OF SAMPLE TOTAL D. C. POPULATION IN SIX OCCUPATIONAL CATEGORIES

Occupational Category	Mean Education	Number	Standard Deviation	Z
Professionals and Managers				
Sample	11.7	7	5.55	-2.59**
Population	14.9	48,755	3.25	
Clerical Workers				
Sample	11.0	7	2.12	-.76
Population	11.9	27,257	3.14	
Craftsmen				
Sample	10.0	24	3.66	.68
Population	9.48	22,360	3.74	
Operatives, transport and non-transport				
Sample	6.4	7	2.77	-2.15*
Population	9.32	965	3.60	
Laborers				
Sample	4.2	9	2.17	-3.29**
Population	8.3	14,435	3.74	
Service Workers				
Sample	8.0	28	3.50	-2.55*
Population	9.4	28082	2.90	

Chi-square = 30.16 P<.01 df = 5

*Significant at the .05 confidence level

**Significant at the .01 confidence level

Note: D. C. population statistics are treated as true population means and standard deviations. For sources, see Table 6.2.

the assertion that immigrants are educationally underutilized is not upheld by the statistical test, which actually indicates the opposite.

An unexpected aspect of the previous test is that some of the immigrants' educational means are very similar in the different occupational categories. In Table 6.2 none of the educational means for the immigrants is twelve years, the number generally required for a high school diploma in the United States. The white collar occupational categories, professional-managerial and clerical, have means of 11.7 and 11.0 respectively; craftsmen, who are blue collar workers average slightly lower at 10.0. This observation prompted the investigator to test differences in the distribution of the immigrants themselves in terms of their occupational and educational levels.[1]

It was expected that high school graduates[2] would tend to be in the white collar jobs and non-high school graduates would be in the blue collar jobs if education at this level were a factor in their occupational distribution. Table 6.4 shows a non-significant difference in the groups. Thus non-high school graduates are just as

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[1] This is the technique employed in Johnston's study of the underutilization of Polish immigrants in Australia. R. Johnston, "The Occupational Distribution and the Level of Education of Polish Immigrants in Western Australia," International Immigration, Vol. 3 (1965), 217-222.

[2] Generally in Latin America, six years of secondary education is required for graduation. In some countries the "bachillerato" is not conferred until successful completion of examinations. In this study, successful completion of the secondary level is considered equivalent to high school.

TABLE 6.4
CONTINGENCY TABLE FOR THE SAMPLE BY OCCUPATION IN THE UNITED STATES AND EDUCATION

	Education Level		
	Non-Secondary Graduates	Secondary Graduates	Total
White Collar	7.5[a] (10.4)[b]	6.5 (3.6)	14.0
Blue Collar	52.5 (49.6)	14.5 (17.4)	67.0
Total	60.0	21.0	81.0

Chi-square = 3.78, df = 1, P>.05

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[a] Includes Yates' correction.

[b] Expected frequencies are in parentheses.

likely to be in white collar jobs as the high school graduates.

Although this finding could be valid it still may not be pertinent if a similar state of affairs exists with the population data. In Table 6.5, the hypothesis is tested that there is a significantly higher proportion of immigrants with high school education in blue collar jobs than non-immigrants. The Z value is .01 level of probability. The D. C. population proportions are taken to be the population proportions for the sample under study; thus, the appropriate test for difference between the proportions is a single-sample test.

These tests provide evidence that immigrants having completed secondary education or more are not working in white collar jobs in greater proportions than those with less than secondary education. The proportion of immigrants with secondary education or more in white collar jobs is significantly lower than the corresponding proportion of the non-immigrant population.

Discussion

The findings are generally clear in testing the premise that Spanish-speaking immigrants are occupationally underutilized while they are not clear as to whether or not Spanish-speaking immigrants are educationally underutilized. The chi-square test of the occupational distributions resulted in a significant difference. Similarly, there is a significant difference in the mean occupational status between the home country job and the job in the United States. Since the means are different, then, the significant correlation must indicate that relative to these different means the immigrants are at occupational

TABLE 6.5
COMPARISON OF SAMPLE AND D. C. POPULATION PROPORTIONS OF HIGH SCHOOL GRADUATES (OR EQUIVALENT) IN WHITE AND BLUE COLLAR OCCUPATIONS

	High School Graduates	
	Sample	Population
White Collar	.33 (7)[a]	.68 (67,688)
Blue Collar	.67 (14)	.32 (32,569)
Total	1.00 (21)	1.00 (100,257)

Difference between proportions in blue collar occupations, $Z = 3.44$, $P<.01$

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[a] Number of cases are in parentheses.

statuses in the U.S. which are equivalent in rank to their statuses in the home country. Furthermore, the U.S. mean occupational status is significantly lower than the home country's mean occupational status pointing out the slippage in overall occupational status.

In short, the immigrants are in occupations generally below the status of their occupations in their home countries. Much of this is accounted for by the movement of a significant number of immigrants into the service and labor occupations and out of the other categories except sales and clerical. Part of it must also be attributed to an overall slippage in status throughout the occupational status distribution although the relative status rank tends to remain the same from home country occupation to U.S. occupation.

The tests of educational underutilization reproduce the findings of Fogel concerning the Mexican-Americans in the Southwest and Johnston concerning Polish immigrants in Australia (see Chapter II). Fogel found that Mexican-Americans are overachievers in terms of their educational attainment vis-a-vis the "Anglo" population. The Spanish-speaking immigrants in the District of Columbia have mean educations significantly below the population means in four out of six occupational categories. Johnston demonstrated that the Polish immigrants are only underutilized if they have secondary education but not elementary or university. Spanish-speaking immigrants having completed a secondary education or more are also underutilized. In addition, Spanish-speaking immigrants have significantly fewer of their ranks in the white collar occupations (and conversely more in the blue collar occupations) than the D. C. population, even when years of schooling are taken into account.

It is not easy to reconcile these apparently contradictory findings. On the one hand, the Spanish-speaking immigrants are overachievers and, on the other hand, there seems to be fewer of their numbers in the white collar occupations than one would expect. A closer look at the mean educational attainments (see Table 6.2) of the immigrants in the occupational categories offers some suggestions for dealing with this dilemma. Three of the significant mean differences are in blue collar and, for the most part, semi-skilled occupational categories. Employment requirements for these occupations would most likely not be directed at limiting hiring to graduates of the secondary education level as would white collar employment practices.[3] The District of Columbia workers in these categories are below the mean education for their population. So there is the general tendency in these blue collar occupations to draw from the lowest educational ranks of the pool of available manpower; these ranks in the immigrant manpower pool are much lower than they are for non-immigrant manpower.

The other mean educational attainment of the sample which is significantly lower than the population is in the professional-managerial category. This is surprising until it is realized that musicians are considered professionals. In the sample there were a singer and a drummer with less than secondary education. They accounted for two out of the four professionals. Managers, also included in the combined occupational category, do not necessarily require educational prerequisites for their positions. In the case of the sample, they were the most skilled at their trade and gained a position of supervision probably because of a combination of being expert and being very responsible. Their skill is of a type that can be picked up on the job. For example, in one case, an immigrant began as a bus boy and progressively moved up to wine steward, waiter, bartender, headwaiter, and, finally, manager.

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[3] A 1967 survey of the San Francisco Bay area showed that a high school education was the minimum requirement for 24 per cent of the employers of the semi-skilled while this educational requirement was set by 68 per cent of the employers of clerical workers. R. Collins, "Functional and Conflict Theories of Educational Stratification," in Education: Structure and Society, ed. by B. R. Cosin (Baltimore: Penguin Books, 1971), Table 1, p. 176.

There is also the question of levels of educational opportunity which are different in the Latin American countries and the United States. This difference disturbs the usual expectations one has for the relationship between ability and educational attainment. The availability of schools with the full run of grades would be the primary determiner of educational attainment for individuals in different countries when abilities and motivations are equal. Since the typical immigrant has not finished secondary school, in the educational frame of reference of the United States, he is a dropout and a failure. But since the immigrant graduated from elementary school, in the frame of reference of many Latin American countries, he is a success. This difference in educational opportunity is reflected in a hypothetical comparison of individuals with equal abilities from different countries. Although their abilities and motivations may be equivalent, they have different educational attainments. Therefore, if it is true that the immigrants are overachievers in terms of their education, although one explanation is probably a high achievement motivation, part of the answer is due to differing educational opportunities in the Latin American countries and the United States.

In summary, Spanish-speaking immigrants are not working in occupations in the United States equivalent to their occupations in their native countries. Although they appear to be educational overachievers much of this is a reflection of the generally lower level of education in Latin American countries and in the group of immigrants themselves. Actually, there are fewer Spanish-speaking immigrants in the white collar occupations than is expected from the population proportions even when education level is taken into account. There seems to be an underutilization of graduates of secondary school (or its equivalent) who are not being employed in occupations commensurate with their educational attainment.

CHAPTER VII

CONCLUSIONS AND RECOMMENDATIONS

Summary

This research project has been directed toward answering four questions:

1. What are the characteristics of Spanish-speaking immigrants in the District of Columbia and how do they compare with other populations?
2. What is the relationship between the native education of Spanish-speaking immigrants and their U.S. occupation and income?
3. Are Spanish-speaking immigrants underutilized in the U.S. economy?
4. What implications do the first three problems have for further research and in setting policy for manpower training programs which include Spanish-speaking immigrants among their clients?

In order to guide the procedure for considering these problems, three research objectives were delineated. The first objective was to accumulate data on certain demographic and other appropriate characteristics related to the problem. This data was collected by means of an interview survey in the District of Columbia. The second objective was to test statistically the research hypotheses concerning the relationship of education with the following variables: present U.S. occupation, present U.S. salary, last home occupation, and English proficiency. The third objective was addressed to the utilization of Spanish-speaking immigrant manpower and sought to test the hypotheses that there is a significant difference in native occupation, present U.S. occupation and in the education of immigrants and non-immigrants in the same occupational categories.

What is to follow undertakes to arrive at conclusions for each one of the original questions. The first three questions are answered in the section on conclusions. The second section delineates the limitations which qualify the interpretation of the findings and set the conclusions, implications and recommendations in their proper perspective. The final two sections deal with the fourth question. These sections present implications for further research and recommendations for manpower development policies.

Conclusions

The "Typical" Spanish-Speaking Immigrant

By way of summarizing the characteristics, a statistical description of the "typical" male Spanish-speaking immigrant of the sample will be outlined based on measures of central tendencies and frequency distributions. The composite immigrant is thirty-seven years old from El Salvador, Guatemala or the Dominican Republic and has been in the United States for about five years. He is brown (mestizo) and was the second male child born in his family. He is married and has about two children of his own.

In his native country he completed eight years of schooling before entering the labor force. His first job was as an apprentice in the craft trades. His last job before migrating was as a craftsman, such as a tailor or carpenter, like his father before him. He earned about $89 a week on that job.

In the United States the Spanish-speaking immigrant first worked as a bus boy. He earned only three dollars more than in his last home occupation. Currently, he is earning $140 a week as a kitchen helper or craftsman in the construction industry. Since he came to the United States for economic reasons, the fact that he is earning fifty-one dollars more at his present occupation than at his last home occupation has been one of the reasons for deciding to remain and to become a citizen.

He seems to have adjusted fairly well to his new environment. Perhaps part of this is due to the burgeoning Spanish-speaking community now in the District of Columbia.[1] He speaks halting English. Although he is able to communicate sufficiently to count some native North Americans among his friends, he says his greatest problem is the language barrier. He is a member of an organization in the District and knows who the active members of the community are.

The comparison of the immigrant's characteristics to those of other populations reveals that Spanish-speaking immigrants tend to resemble the black population in the District more than the total Spanish language population, which in turn tends to resemble the white population. In making reference to the Spanish language population, then, it will be important to differentiate among the sub-populations. This study has identified one sub-population, the immigrants, which stands apart from the over-all Spanish language population on certain telling socioeconomic characteristics.

The Relationship of Education to Economic Success

In anticipating the conclusions of this research, it was believed that the immigrant's native education measured by the highest grade completed would indicate success in securing a job and earning a living. The data seems to bear this out. Education obtained in the home country varies as does occupational status and earnings in the United States. Thus, the relationship between education and economic success, as measured by occupation and earnings, is a positive one and is significant in that education predicts economic success more than can be expected by chance.

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[1] Eleanor Rogg, "The Influence of a Strong Refugee Community on the Economic Absorption of its Members," International Migration Review, Vol. 5, No. 4 (Winter, 1971), 474-481.

This correlation seems to be of the same magnitude as the comparable relationship in the U.S. population. For 1962, it was found that education explained 10 per cent of the variance in income for a sample of the total U.S. population compared to the 8 per cent for the same relationship in the sample of Spanish-speaking immigrants. For the national sample, education explains 36 per cent of the variance in occupational status while in the sample of immigrants the corresponding figure is 25 per cent. The differences in the correlations are not statistically significant.[2]

The length of time that the immigrant has been in the United States and his work experience in years do not disturb significantly the relationship between education and economic success. It had been anticipated that if the effects of time in the United States were eliminated, the correlation between education and economic success would increase. Actually the opposite occurred, although the amount of change is not meaningful. Further analysis revealed that immigrants who have been in the United States longer are better educated for their age than the others, which explains the unexpected influence of time. Similarly, work experience does not appear to be an advantage for Spanish--speaking immigrants in achieving higher occupational statuses.

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[2] The correlations from the national sample are found in Peter M. Blau and Otis D. Duncan, The American Occupational Structure (New York: John Wiley and Sons, 1967), p. 402, and Christopher Jencks, et al., Inequality (New York: Basic Books, 1972), p. 322.

The correlation between education and economic success is reduced by eliminating the effects of the occupational variables since all of the influence of education works through the immigrant's previous occupations, especially his first job. The immigrant's first home occupation removes so much of the effects of education from both components of economic success (present occupation and earnings) that education loses its significant relationship with each of them.

English proficiency is not a factor in the immigrant's present occupation beyond its association with educational attainment. Education explains 44 per cent of the variance in English proficiency and, in turn, English proficiency explains 21 per cent of the variance in present occupation. However, statistical procedures indicate that when the effects of educational attainment are partialled out of the relationship of English proficiency to occupation, the relationship ceases to be significant. Thus, education exerts influence on present occupation and English proficiency simultaneously and is the common source of their relationship. In regard to the relationship between English proficiency and earnings, not even the simple correlation is significant.

Further analysis revealed even more about the relationship between education and economic success. The nature of this relationship is dependent upon how these variables are distributed among the immigrants. The relationship of education to weekly earnings can probably be attributed completely to the group of immigrants with college education who differ greatly in earnings when compared to the rest of the sample. For the most part, then, the relationship between education and earnings depends on the significant association between being a college graduate and weekly earnings since weekly earnings is not significantly associated with the other levels of education. Education explains 19 per cent more of the variance in occupation and 36 per cent more of the variance in earnings when a non-linear model is employed.

In summary, the native education of the immigrant is an indicator of his economic success in the United States. By knowing the immigrant's educational level, it is possible to predict his occupational status with 25 per cent greater accuracy than knowing only the mean occupational status and to predict his earnings with 8 per cent more accuracy than knowing only the mean earnings. The nature of the relationship between education and earnings is dependent for the most part on the difference in income when a few highly educated immigrants are compared to the rest. In defining the relationship sequentially, the influence of the immigrant's education on both occupation and earnings is transmitted indirectly through his first occupation in his home country.

Utilization of Spanish-Speaking Immigrant Manpower

It is usually assumed that immigrant manpower will be underutilized. The same assumption was made for the Spanish-speaking immigrants in the District of Columbia. The expectations were that this group of immigrants would be underutilized in terms of their previous occupations. In terms of education, it was anticipated that the general lower level of education in Latin America as compared to the United States might not allow a straightforward comparison of immigrant and non-immigrant workers, especially in the less skilled occupations.

The results indicate that immigrants are definitely underemployed in the United States compared to their previous home occupations. Although the immigrants are ranked in their occupational status in generally the same order in the United States as they were in their native countries, their occupational status is typically lower.

Much of this loss is probably the result of immigrants working in the service occupations in greater numbers than in their native country.

In regard to educational underutilization, the results present contradictory evidence if taken at face value. On the one hand, in four of six occupational categories the mean education for the immigrants is significantly lower than for non-immigrants in the District of Columbia. On the other hand, there are fewer immigrants in white collar occupations than one would expect from the proportion of immigrants having high school education. Furthermore, there are fewer immigrants in white collar jobs in comparison with non-immigrants of comparable educational background. Thus, the immigrants are overachievers according to the first finding and underutilized according to the second.

These findings can be reconciled by considering that the immigrant's lower mean education is a reflection of the general lower level of education in the Latin American countries and that immigrants are for the most part in occupations which do not emphasize educational qualifications. Therefore, the finding that immigrants are overemployed educationally in comparison with non-immigrants is primarily illusory.

In short, there is a significantly greater proportion of immigrants in the blue collar occupations than is warranted by their proportion with a secondary education or more in comparison with the non-immigrant District population. Immigrants are working in U.S. occupations generally lower in status than their native occupations and many more immigrants are working in the less skilled service occupations in the U.S. than in their home countries. Thus, all immigrants in the District tend to be underutilized occupationally and immigrants who have completed secondary education or more are underutilized educationally.

Limitations of Findings

The conclusions and implications derived from the findings are only as accurate as the data on which they are based and the assumptions of the research design. Some of these limitations are inherent in the procedure of measuring the characteristics. These were recognized from the beginning. Other limitations are inherent in the errors of sampling and serve to channel the generalizations of the data to that part of the immigrant population which is actually represented by the sample.

The limitations which were unavoidable in the procedure are mainly those associated with the accuracy of the subjects' responses and the inability to control the correspondence of the units of measurement. Thus, measuring education in grades does not control for quality or type and even occupations with the same title have different functions or degrees of responsibility according to location. It is assumed that the subjects were frank and it is believed that, except where there is real likelihood of forgetting, there was not much distortion in the responses.

The statistical analysis of the data was also limited by certain assumptions and should be considered with these in mind. Categorization of data always involves a certain arbitrariness which can color the findings. The correlation methods depend on the assumptions of linearity, additivity, and heteroestadicity. In the principal relationships under investigation it was found that the assumption of linearity does not provide the best description of the relationships; not as much information is lost by relaxing this assumption for the correlation of education to occupation as that of education to earnings.

The findings are also limited by the composition of the sample. There are no survey or census data describing specifically the population of the study. To gain some degree of insight into the population, related data was utilized although it is not exactly comparable. By making use of this data and utilizing what is known about the refusals and non-responses, several comments can be made about the representativeness of the sample to the population.

The sample approximates best the areas of moderate and high concentrations of the Spanish-speaking people. This corresponds closely to what is generally known as "The Spanish-speaking community" in the District of Columbia and tangential areas. Since most of this area is also characterized by medium and low rent housing, the sample may underrepresent more affluent immigrants. Using combined broad occupational categories the sample was not found to be significantly different from the 1971 Spanish-American immigration inflow. Thus, on a variable known to be highly associative with the principal variables in this study, the sample apparently is fairly representative.

From what is known about the refusals and non-responses, the sample tends to overrepresent the more successful immigrant with few personal problems. It neglects, however, the immigrants who are continually occupied in their work and those who tend to have strong ties with their native country and plan on returning, neither of which are likely to be typical.

Since the limitations of the sample are based on data not directly applicable to the survey population and the knowledge about the refusals and non-response are partial and non-systematic, the degree of variance from the survey population is not known. In any event, future studies of Spanish-speaking immigrant populations are needed to test the conclusions of this study.

Implications for Further Research

The Function of Education in Society

There are two views which describe how education functions in society. The position of functionalism is that the educational system equips the individual with certain skills and talents required for the optimum functioning of society. The other view, the conflict theory, holds that the status groups in society contrive through their power and prestige to limit entry into their groups by controlling certain features of the educational system and the occupational structure (see above, pp. 13 and 26). The findings of this study seem to support the functional position in one respect and the conflict theory in another.

The conclusion was drawn that education is an indicator of economic success for the immigrants and that its influence on present occupation is indirect. It was reported that father's occupation plays no part in the relationship between education and present U.S. occupation but that it does in the relationship of education to last home occupation. In other words, the effects of the status group origin of the immigrant plays a part in determining home occupation but does not seem to be involved in determining the immigrant's U.S. occupation. The relationship of education to occupation for the immigrant in the United States seems to follow the tenets of functionalism while the same relationship in his native country can be at least partially explained by the conflict theory.

Because they have separated themselves from their native society and culture, immigrants offer a unique opportunity to assess the usefulness of the functionalist and conflict theories. The study of immigrants and their occupational patterns in the United States allow for some assumptions to be made about the effects of the status groups on occupation. Although the status group of the immigrant could have accounted for his educational attainment, the effects of the status group on occupation would be mitigated by the act of migration and the subsequent change of societal context. In other words, employers are less apt to recognize the social class membership of a foreigner than of a native. Also, the informal network of social relationships which could influence employers would probably be inoperative in the United States. Employers are more likely to regard an immigrant's educational attainment free of the usual social connotations and define education in terms of its actual qualification for the job rather than as an indication of status.

For example, the correlation between education and present occupation is significantly stronger than the one between education and his first occupation in the United States (.50 vs. .35, $t = 2.01$, $P < .05$). This may indicate that as the immigrants have time to overcome the obstacles which are amenable to individual adjustment, they tend to gravitate toward the occupations which most correspond to their skills and talents as reflected by their educational attainment. If the argument above is accepted, this process operates independent of the influence of status group membership. Further research which compares immigrants to natives might lead to greater understanding of the interconnection among the power and prestige of the status group, employers' subjective interpretations of education as status, and education as an indicator of talent and skills, all of which play a part in determining occupational placement.

Another advantage of studying a culturally different population such as immigrants is to test the universality of hypotheses generated in a uni-cultural situation. For example, in the sample of Spanish-speaking immigrants, the correlation between education and last home occupation is not significantly different from the correlation between education and present U.S. occupation. Further, both of these correlations are not significantly different from the correlation of the same relationship in the U.S. population. In the same vein, Sicron found that the structures of occupations, ranked by mean educational levels, were not significantly different in forty-five countries.[3] There seems to be a universal principle operating that merits further analysis. This analysis ought to seek to establish the significance and magnitude of this relationship in diverse populations. A study by Jones comparing occupational achievement in the United States and Australia has taken a step in this direction.[4] Furthermore, it would lead to greater understanding of the function of education in society if such things as cultural differences, differences in the content and quality of education and types of economies were taken into account.

Cross-cultural studies, as suggested above, could also throw some light on the degree to which educational attainment predicts relative or absolute occupational position. In the sample of Spanish-speaking immigrants, education is significantly correlated with both native occupation and occupation in the United States to the same extent but the occupations in the United States are significantly different from the occupations in the home countries.

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[3] Moshe Sicron, Interrelationship Between the Educational Level and Occupational Structure of the Labor Force (Dissertation Submitted to the Faculty of the Graduate School of Arts and Sciences, University of Pennsylvania, 1968, Unpublished).

[4] Lancaster Jones, "Occupational Achievement in Australia and the United States: A Comparative Path Analysis," American Journal of Sociology, Vol. 77, No. 3 (1971), 527-539.

Educational attainment, then, does not ascribe the precise occupational status (nor perhaps even the broad occupational category) but it does seem to ascribe the relative occupational position. Accordingly, attaining a certain number of grades of education is not so much an indicator of the particular technical skills that the individual has learned or possesses. Rather it is either an indication of a capacity which translates into specific job skills through experience or, in terms of the conflict theory, a reflection of the social status desired by employers. This type of reasoning leads to the argument that the occupational status of the individual is primarily a function of the forces operating in the labor market and that the educational distribution of the occupational structure tends to be a function of educational supply rather than demand (see above pp. 27-29).

Education and the Economic Absorption of Immigrants

The theoretical orientation of this study was to apply the model of occupational status attainment as offered by Blau and Duncan (see above, p. 12) to the process of economic absorption of immigrants. Since their model places the variable of educational attainment in a crucial position in explaining occupational status, it was also hypothesized that the education of immigrants received in their native countries would be important in influencing the occupational attainment and earnings of Spanish-speaking immigrants. The results of this study support this reasoning.

When some of the other variables in Blau and Duncan's model are included in the analysis, modifications in their working model become apparent. In determining last home occupation, education mediates the effects of father's occupation and is influential in its own right in a direct path and in an indirect path by means of first home occupation. Thus, in the home country, education plays essentially the same role for immigrants as it does in Blau and Duncan's model of the U.S. population.

In determining present occupation in the United States, however, education has no net direct effects since first home occupation apparently transmits all of the influence of education. Or, in different terms, education is a direct determinant of occupational status in the society in which the education was received. It becomes a background variable, though, in determining occupational status in the country of immigration. Further analysis using the path analysis method would identify in more detail the direct and indirect effects of all the determinants. This study serves to point out that educational attainment should certainly be included as a variable in the analysis and suggests its paths of determination.

In addition, educational attainment seems to be linked with many factors which could affect economic integration. Educational attainment is linked to family background (as measured by father's occupation), English proficiency, North American friends, work experience, and non-formal education in the United States. There were findings which linked education to certain motives to migrate to the United States and to certain problems as an immigrant. Greater understanding of the role of education in economic integration could be acquired by exploring the attitudinal variables to a greater extent and including them in the regression equations with the economic variables along the lines of the Wisconsin model (see above, p. 21). This would determine whether or not there are other indirect effects from education that did not show up in this study. Also, it would assess the influence of such factors as achievement motivation and expectations in the relationship between education and economic success.

The conclusion was drawn that the degree of economic integration as indicated by the immigrant's utilization in the labor force is below what is expected from the immigrant's previous occupation and from the proportion with a secondary education or its equivalent. The mean time in the U.S. for the immigrants in this study was five years. At this point the immigrants are underutilized. But this study did not explore the possibility that there is a period of time during which immigrants typically are underutilized. Nor did the study determine directly that the cause of underutilization was employer bias, although this is an assumption. Further research, perhaps using a longitudinal design or a participant observation approach, which probes deeply into employment practices in regard to immigrants might help to resolve these questions. The finding that immigrants did raise their mean occupational status from first to present U.S. job is some indication that occupational movement can be expected. What should be determined is whether immigrants ever obtain an occupational status commensurate with their education and what factors determine the rate of occupational movement during this course of time.

Recommendations for Manpower Development Policies

Spanish-speaking immigrants in the District of Columbia are not utilized in the labor force to the fullest extent of their capacity, to the detriment of both the immigrant and the labor force. The immigrants are not being utilized in terms of their previous occupational experience and are underrepresented in white collar occupations. This conclusion raises the need for policies directed at eliminating wastage of immigrant manpower.

These policies should be designed to facilitate what appears to be the natural tendency for immigrants to gravitate into the occupations which most resemble their native ones. Thus, there are fewer immigrants in the service occupations at the time of present occupation than at the time of first U.S. occupations. There were practically no immigrants in the service category in their own countries. Therefore, the policy should have the objective of facilitating this natural shift from service back into the crafts and operative occupations, perhaps by effecting the change within the company for which the immigrant is currently employed.[5] For example, a bus boy who had been a truck driver in his country could be shifted to doing deliveries for the restaurant.

Programs which implement this objective should probably be of the job-development type rather than training programs. The job developer would assess the immigrant's skills and convey the information to the employer. The employer would then be encouraged to make full use of the skills. It is recognized that the immigrant may not be wasting time at the lesser job. He is in the process [illegible] making the necessary adjustments and becoming familiar with the language and customs. But having been apprised of the immigrant's skill, the employer could indicate to the immigrant that, in due course, after a period of time to allow for the cultural adjustment, he would be moved to a job more compatable with his skills. This procedure would heighten the morale of the immigrant and benefit the employer by providing him the opportunity to secure a steady worker (the immigrant would be more likely to stay with the company knowing that eventually he would be moved into a more appropriate job).

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[5] Immigrants entering under the work preference classification of the immigration law must have guaranteed jobs before migrating. They may change jobs after arriving, however. The policy suggested here may be in conflict with work certification program of the Department of Labor and Immigration and Naturalization Service. Nevertheless, many immigrants enter under non-work preference categories and immigrants are free to change jobs after arrival in almost all cases.

Certain inferences can be made about the non-formal educational programs attended by immigrants since forty per cent of the sample had attended these programs. These programs were generally either government-sponsored full-time manpower training or English instruction provided by religious groups, the adult education branch of the D. C. public schools and other socially-oriented private and public groups. Some of these programs are full time but the majority were not.

These programs seem to be more conducive to the cultural integration of the immigrant than to economic success. Some of the characteristics which would promote cultural integration, i.e., American friends and English proficiency, are associated with occupation. Statistical techniques, however, do not find that non-formal education influences occupation through these other variables. These techniques indicate, in fact, that the relationships of non-formal education to the cultural integration variables are due to its correlation with education. Therefore, the conclusion here is that these programs tend to capitalize on the immigrant's previous education and there are few signs of any direct value.

Part of the explanation for a lack of direct value is that for many programs immigrants must leave their jobs or forego extra jobs at night to receive the instruction. Thus, by receiving instruction, the immigrant breaks his occupational momentum and may even fall back at the end of the program. He may have to start again at the same level in a different occupation or even a lower level after the training program ends. It could be that these programs will pay off in the long run, but they do not show signs of value at this point.

The lower educational level of those who do not attend the non-formal education programs may indicate a general alienation from systematic instruction. An educational or training program which overlooks this prospect will always draw the more educationally-oriented participants who value education more for its own sake. This approach tends to minimize the upgrading of the more work-oriented or less educated immigrant by not helping him integrate into industry and adapt his skills. The solution to this problem necessitates the training agency to bring the program to where the trainees are -- the job itself.

The best procedure for this would probably be the job development arrangement mentioned above or an on-the-job situation in which a fellow North American workman would be chosen as the immigrant's "buddy" and be assigned to teach him English and the necessary technical skills. The workman and the immigrant would be supervised by someone specially trained in teaching English as a second language, who is bilingual and has some understanding of the job. This person could compose vocabulary lists and direct the workman in his efforts to teach the immigrant English and to re-tool his skills to fit the job. The assumption is that if the workman is given the assignment, and maybe even remunerated for his extra efforts, the close relationship between doing the task and the English instruction should provide the ideal learning situation. Also the close relation between the workman and the immigrant should also facilitate cultural as well as economic integration. The advantages of this procedure might result in a significant direct association between non-formal education, occupation and the cultural integration variables which is not dependent upon their common correlation with education.

Programs designed especially to teach English as a second language to immigrants can be guided by some of the findings of this research. Although English proficiency is logically an important factor in determining economic success, the findings of this study minimize its influence since it is completely dependent on the educational level of the immigrants. Apparently there are certain limitations on the level of proficiency attainable by some immigrants. These limitations are age, education and time in the United States, with education being the strongest.

English instruction, in light of these limitations, should have realistic objectives. Thus, as in most educational programs, the objectives for the immigrants should be differentiated without a uniform definition of success for all individuals. It would be an injustice to try to predetermine the degree of success attainable for each immigrant, but when some immigrants do not seem to respond to instruction as readily as others it could be assumed, when no other explanation is appropriate, that these limitations are operating. Furthermore, a variety of instructional methods should be tested out on immigrants differing in these limitations in order to develop effective methods to overcome the limitations.

It is likely that for the highly educated immigrants -- although they would probably be the most responsive -- formal education instruction may not be necessary. The personal motivation and academic background of these immigrants operating in the English language environment may be sufficient without instruction to allow attainment of considerable proficiency. Also, courses could be shorter for this group. Those with little education, past thirty-five, and in the United States for less than five years, would need more intensive instruction by well-trained teachers in order to achieve the higher levels of English proficiency.

APPENDIX A

THE DEVELOPMENT OF THE INTERVIEW GUIDE AND TECHNIQUE: TWO PILOT STUDIES

Written Questionnaires

The first pilot study tested the validity of using written questionnaires. The questionnaires were distributed to a class of Spanish-speaking adult immigrants who were studying English. The investigator noted the problems the students encountered with the questionnaires and informally attempted to evaluate their attitudes toward the task. Twenty-five questionnaires were returned. The majority of the students filled them out in the investigator's presence while some students took them home and returned them in the following class meetings.

Several difficulties with the written questionnaires as a method for gathering information for this study were noted. Students who were illiterate or barely literate resisted the task and, of course, had trouble filling out the forms. Even some of the students with high school education displayed signs of irritation at having to go through the questionnaire, which was only one page and required only several-word answers at the most.

Another shortcoming of the written questionnaire was the closed-ended form of the questions. Thus, subjects who did not fit the categories and could not formulate a concise explanation would simply leave the question unanswered.

It was concluded that written questionnaires mailed to subjects would result in a biased sample because only those who were fairly literate would return the forms correctly completed. And even among these, the closed-ended nature of the questionnaire, which was short and easy to answer in order to insure that at least some of the forms would be returned, might force certain answers. Thus, it is believed that personal contact plus a less rigid style of soliciting the data would give a more accurate picture of the sample.

Telephone Interviews

The investigator was searching for a way to interview a large sample but yet still remain within the practical limitations imposed by the difficulty in locating eligible subjects. A second pilot study was designed to test the receptiveness of telephone interviews. The practical advantages are obvious but another consideration was the psychological advantage which might be gained by the impersonality of the telephone.

A social service agency provided the names of Spanish-speaking persons seeking employment. The investigator eliminated all but thirty who were eligible subjects. One Friday night, eighteen of the telephone numbers of eligible subjects were called. Of this number, only four subjects were contacted directly and interviewed; eight numbers were reported out of service; subject had moved, or were wrong numbers; at three numbers there was no answer; and at three other numbers the subjects were at that number but were out of the house. It should be noted that these numbers had been provided within the last six months before the calls were made, which gives some indication of the transiency of the population.

APPENDIX B

INTERVIEW GUIDE FACSIMILE[1]

CODE NUMBER:
1. Country of Origin:
2. Time in the U.S.:
3. Date of Arrival:

BIOGRAPHICAL DATA:

4. Date of Birth:
5. Place of Birth:
6. Size of Family:
7. Order of Birth Among Males:
8. Parents' Nationality:
9. Occupation of Parents:

SCHOOLING AND EMPLOYMENT:

10. Primary Schooling:
    a. Place:
    b. Date Began:
    c. Ages of Attendance:
    d. Diploma:
    e. Grades Repeated:
    f. Type of School:
11. Secondary Schooling:
    a. Place:
    b. Date Began:
    c. Ages of Attendance:
    d. Diploma:
    e. Grades Repeated:
    f. Type of School:
12. Further Education:
    a. Place:
    b. Date Began:
    c. Ages of Attendance:
    d. Diploma:
    e. Grades Repeated:
    f. Type of School:
13. Reason for Leaving School:
14. Satisfaction with Education:
15. Special Training Outside of School:
16. School or Training in the U.S.:
17. Employment in Country:
    a. First Job:
        1. Place:
        2. Dates and Duration:
        3. Job Title:
        4. Activities and Duties:
        5. Type of Company:
        6. Earnings:

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[1] In the original guide, there was ample space to record the responses.

    b. Last Job Before Leaving Country:
        1. Place:
        2. Dates and Duration:
        3. Job Title:
        4. Activities and Duties:
        5. Type of Company:
        6. Earnings:
    c. Type of Jobs Held Between First and Last:
        1. Place:
        2. Dates and Duration:
        3. Job Title:
        4. Activities and Duties:
        5. Type of Company:
        6. Earnings:
    d. Unemployment:
    e. Job Satisfaction:
18. Employment in the U.S.:
    a. First Job:
        1. Place:
        2. Dates and Duration:
        3. Job Title:
        4. Duties and Activities:
        5. Type of Company:
        6. Earnings:
    b. Present Job:
        1. Place:
        2. Dates and Duration:
        3. Job Title:
        4. Duties and Activities:
        5..Type of Company:
        6. Earnings
    c. Types of Job Held Between First and Last:
    d. Unemployment:
    e. Job Satisfaction:
19. Years Working:
20. Special Skills and Abilities:
21. How Learned:
22. Income for Last Year in Country:
23. Income for Last Year in U.S.:

HOUSEHOLD:

24. Marital Status:[2]
25. Number of Dependents:

ADJUSTMENT:

26. Nationality of Friends:
27. American Friends:
28. Major Problems:
29. Reason for Coming to U.S.:
30. U.S. Expectations:

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[2] Item not asked in the interview because of highly personal nature of item.

INTEGRATION:
31. Membership or Attendance of Organizations:
32. Knowledge of Community Leaders and Organizations:
33. English Evaluation:
    a. Where are you from?
    b. What language do you speak?
    c. When did you come to the U.S.?
    d. Who did you come with?
    e. How long have you been here?
    f. Will you stay in the U.S. for a long time?
34. English Literacy (R reads the following passage reproduced on a separate card:

NIGHT WORKERS[3]

Even as most of us sleep, there are men and women at work. In the glare of lights, in the darkness of shadows, with night all around them, they go about their jobs in places as different as fish markets and firehouses, tugboats and television stations. Life would not be as pleasant or as safe without them, but often their work and their world are unknown to many people.

Comprehension Questions:

What happens at night?
What jobs do night workers have?

IMPRESSIONS:
35. Home Environment:
36. R's Attitude:
37. R's Appearance:
38. R's Speech:

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[3] Theodore Clymer and Gretchen Wulfing, All Sorts of Things (Boston: Ginn and Company, 1969), p. 13.

APPENDIX C

CONVERSION OF LAST HOME COUNTRY EARNINGS INTO REAL EARNINGS

The data analysis of this study involves the use of statistics on the immigrants' earnings in their last home occupation. A primary consideration of this task is how the earnings can be adjusted in order to avoid distortions created by international differences in price structure and rates of inflation. It is obvious that standards of living vary as do costs of living in different places and at different times; to compare a less developed region's income with the United States' without taking these differences into account would result in a spurious comparison. Also, within a diverse region such as Latin America, the contrasts among these countries would also make income comparisons difficult. The problem, then, is to provide a means of income comparison valid across space and time.

The procedure to solve the inter-spacial comparison problem is offered by Braithwaite. Temporal comparison of money by adjusting for inflation was accomplished by using consumer price indices for the United States and Latin America. Both methods are discussed in detail in this appendix.

Purchasing Power Ratios

Braithwaite sought to provide an index which would allow comparability of national accounting aggregates among the countries of Latin America and other regions or countries. He used the American dollar as the common denominator of this index. The technique involved the determination of the market basket price of goods similarly available in all the countries of the region. The prices of the goods selected were collected during the 1960-1962 period in the capital cities in Latin America. Adjustments were made according to quality, type of residential district, and seasonal fluctuations. One of the results of the study is a table of Gross Domestic Products (GDP) using three purchasing power equivalents: these were based on the price structure weighted by per capita consumption of Latin America, the United States price structure, and the geometric mean of the two.[1]

To illustrate how the ratios were formulated and used to adjust immigrants' salaries, an example will be provided. Braithwaite found the following per capita GDP in U.S. dollars for El Salvador in 1960 using the three purchasing power equivalents described below: $307 (Latin American weighting procedure), $257 (United States weighting procedure), $280 (geometric mean of the first two). If the official exchange rate is used, the per capita GDP would be $228. In order to calculate a conversion ratio taking into account the price structure in Latin America, the per capita GDP based on the official exchange rate, $228, is divided by the per capita GDP based on the Latin American price structure, $307. The resulting ratio is .74. This indicates that 74 cents (U.S. currency) buys in El Salvador what one dollar buys in the United States. In other words, and as every tourist knows, the dollar is worth more in most Latin American countries.

Table A presents the conversion ratios for the three weighting procedures described above. In this study, since the relative incomes of the immigrants are the important

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[1] Stanley Braithwaite, "Real Income Levels in Latin America," The Review of Income and Wealth, (XIV, No. 2, June, 1968), p. 129.

TABLE A
ADJUSTED EXCHANGE RATE RATIOS[a] FOR 1960

	Latin American Weights[b]	United States Weights	Geometric Mean of the Weights
Argentina	.537	.778	.646
Bolivia	1.010	.756	.618
Chile	.749	1.131	.921
Colombia	.654	.896	.771
Ecuador	.614	1.220	.711
Paraguay	.541	.727	.627
Peru	.532	.702	.612
Dominican Republic	.839	1.058	.945
El Salvador	.743	.887	.814
Guatemala	.829	1.042	.931
Honduras	.843	1.016	.933
Mexico	.595	.746	.668
Nicaragua	.823	1.065	.938
Panama	.844	1.012	.926

[a] These ratios are derived from Braithwaite, op. cit., Table 3, p. 129. The ratios are considered to be the equivalent to the dollar if spent in that country. It is the adjusted per capita GDP, measured in U. S. dollars at the official exchange rate, divided by the per capita GDP measured by Braithwaite's purchasing power equivalent according to regional price patterns, see p. 199 of the text.

[b] "Weights" are based on the average per capita consumption in the region, ibid., pp. 119-123.

factor, the Latin American equivalent is used to calculate salaries. Braithwaite uses the geometric means for interregional comparisons in his study, but he states, "Since no weighting system gives universal satisfaction, it is a question of selecting that which satisfies the major conceptual and practical requirements...."[2] For this study, the Latin American weighted conversion ratios were selected.

Myers,[3] who studied Peruvian students in the United States, developed a subjective method to determine purchasing power parity and arrived at conclusions similar to Braithwaite's. He asked the students how much they would have to earn in Peruvian national money to live in Peru at an equivalent standard to what $10,000 a year would allow them to live in the United States. A conversion ratio developed in this way turns out to be .75. Myers compares this to the ratio based on the geometric mean of Braithwaite's study for Peru, .61, and concludes that since his population is comprised of a segment of the upper-class it probably reflects the tastes and preferences of Americans. Had he compared his ratio with the ratio derived from the United States weighted equivalent, .70, he would have concluded that his population was indeed influenced by American price structure and preferences. The similarity of the findings are so strikingly alike that one is forced to accept the intuitive notion that immigrants who have college education, and perhaps all immigrants, really do consider different standards of living in a realistic way and that their decision-making is subject to the rules of the rational-man model of the economists.

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[2] Ibid., p. 123.

[3] Robert Myers, Education and Immigration (New York: David McKay Company, 1972), pp. 288-291.

Adjusting for Inflation

Consumer price indices of Latin American countries for the years between 1953 and 1970 are collected in the Statistical Abstract for Latin America, 1971.[4] They provide the necessary data for adjusting for the inflation rate of each Latin American country. The index for Latin America covered most situations since the immigrant's last home salary was the earliest salary tabulated in this study, earned an average of five years ago. In the cases for which the index had no data, the index was extrapolated from the available data.

Summary of the Procedure for Adjustment of Earnings

The following steps were taken to arrive at a uniform 1963 dollar equivalent of earnings in Latin American countries, adjusting for purchasing power differences:

1. The weekly earnings were set to the 1963 base in national money by dividing by the consumer price index for that country.
2. The result was divided by the United States exchange rate.
3. This quotient was divided by Braithwaite's purchasing power ratio which yields weekly earnings in 1963 U.S. dollars adjusted for cost of living and inflation.

An example illustrates this procedure:

1. An immigrant earned 50 colones a week in El Salvador at the time of leaving his job in 1968. Adjusting to the 1963 base in national money entails dividing by the consumer price index of 1.05 for 1968. The result

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[4] Kenneth Ruddle and Hanover Mukhtar, Statistical Abstract of Latin America (Latin America Center, University of Los Angeles, 1971), Table 26.

is 47.6 colones in 1963 money.

2. The exchange rate in 1963 was 2.5 colones to one dollar. Dividing by this rate yields a weekly salary of 19.05 in U.S. dollars.

3. Braithwaite's purchasing power ratio is .74 for El Salvador. Dividing by this ratio results in a weekly salary of 25.74 in 1963 U.S. dollars, adjusted for inflation and cost of living.

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